

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

AD1751
472

[Handwritten signature]

United States
Department of
Agriculture

Economic
Research
Service

AFO-49
May 1993

Agricultural Income and Finance


Situation and Outlook Report

Farm Income Totals Mask Diversity Among 1991 U.S. Farm Households

Full-time
commercial farms



Avg. household income:
Total = \$39,271
From farming = \$25,007

 = 100,000
households

Other farms



Avg. household income:
Total = \$35,944
From farming = -\$614

*In this issue:
Farm Income Perspectives*

Contents

Summary	3
Farm Household Perspective	
Farm Household Income Estimates Provide Additional Perspective on Farm Families	4
Farm Sector Income Outlook	
Cash Receipts May Reach Another High in 1993	12
Improving Grain and Livestock Prices Boost Midwest Incomes	14
Balance Sheet Outlook	
New Survey Shows Land Values Up for '93t	16
General Economy	
Output and Employment Growth Slower than in Recent Recoveries	18
Special Articles	
A Sources and Uses of Funds Account for the U.S. Farm Sector	20
Are Small Hog Operations Surviving in Today's Market?	24
The Impacts of Interest Rates on Farm Businesses	27
The Impact of Taxing Social Security Benefits on Farm Sole Proprietors, Farm Landlords, and the Self-employed	31
List of Tables	
Appendix Tables	

Economics Editor

Robert Dubman (202) 219-0809

Senior Financial Analyst

Bob McElroy (202) 219-0800

Principal Contributors

Janet Perry and Bob Hoppe (Household income) (202) 219-0807

Charles Dodson (Farm income components) (202) 219-0808

Charles Barnard (Assets) (202) 219-0798

Ken Erickson (Financial ratios) (202) 219-0799

Jim Ryan (Debt) (202) 219-0798

Paul Sundell (General economy) (202) 219-0782

Approved by the World Agricultural Outlook Board. Summary released June 15, 1993. The next summary of the *Agricultural Income and Finance Situation and Outlook* is scheduled for release on September 7, 1993. Summaries of Situation and Outlook reports may be accessed electronically through the USDA CID system.

The *Agricultural Income and Finance Situation and Outlook* is published four times a year. See back cover for subscription information.

Summary

New Data Show Average Farmers' Household Income Similar to Other U.S. Households

Most farmers and other household members earn income from farming as well as from a variety of off-farm sources. The average farm household earned a total income of \$36,500 in 1991, compared with the U.S. average income for all households of \$37,900. Farm operators' household income is an extension of income measures used to examine the well-being of the agricultural sector. It is a more appropriate measure of farm household well-being than farm sector income.

In 1991, total income to farm operator households from farm sources averaged nearly \$4,000, compared with \$5,742 in 1990. Income from farming was down due a combination of lower prices for most agricultural commodities and revised methods that allow a fuller accounting for small farms, many of which have negative incomes. These averages, however, mask wide diversity among households. For example, about three-fourths of the over 2 million U.S. farms and ranches have gross agricultural sales under \$50,000. For these small farms, operating expenses typically are larger than gross receipts. For the other 25 percent of farms (which produce over 75 percent of U.S. agricultural products), income from farming is more important to the household. For households operating these larger farms, about \$22,700 of their \$43,600 household income came from farming.

In general, the smaller the farm, the less the household depends on income from farming activities. Many small farms lose money on farming. Despite farm losses, however, households running small farms had an average 1991 total household income of \$34,000 due to off-farm income. This makes successful rural economic development a key element in the future income situation of both farm and nonfarm rural households.

Operations like dairies are most dependent on income from farming, probably because they are so labor intensive that there is little time for outside employment. Livestock operations specializing in products other than milk or red meats were least dependent on farming income.

Sector Forecasts Positive

For the entire farm sector, cash receipts for U.S. agricultural products are forecast up 1-2 percent in 1993. In the first half of this year, carryin stocks from last year's record production of food grains and feed grains were sold at lower prices than a year earlier. However, receipts from soybeans, fruits, vegetables, and greenhouse products are expected to be strong this year. Livestock and poultry prices are also rising.

Lower program-crop prices are raising direct Government payments 6-8 percent. If expenses hold to less than a 1-percent rise, 1993 net cash income could average \$57-\$65 billion.

Balance Sheet Stable

Asset values in 1993 are expected to continue their relatively stable pattern of the past few years. Real estate assets are forecast up 1-2 percent. Inventories of crops and livestock will probably remain essentially unchanged, while the values of financial assets may increase slightly.

Total debt could rise 1 percent in 1993. This would follow a 1- to 2-percent rise each of the last 2 years, which reversed 6 consecutive years of debt reductions. This would leave farm sector equity up a little from last year.

Farm Household Income Estimates Provide Additional Perspective on Farm Families

USDA's farm household income estimates show nonfarm income plays a major role in the farm family's financial well-being. In 1991 the average farm operator household received a total income of \$36,542, of which \$3,994 was from farm sources.

ERS is extending its regularly published farm income tables to incorporate average income of farm operator households from all sources, as well as net farm income figures. These new data will present a more complete picture of U.S. agriculture by adding a perspective of farm and nonfarm income available to farm families.

While about 9 million individuals are directly associated with farming as farm operators, hired farm workers, unpaid workers, or farmland owners, the average household income reported here focuses on the individuals and the members of their households who operate farms currently represented by USDA's annual Farm Costs and Returns Survey (FCRS). This group comprises the major entrepreneurs and receives most of the residual income from the agricultural production process. Seventy-four percent of these households operate non-commercial farms with gross agricultural sales of under \$50,000, receive relatively little income from farming, and heavily influence the average.

Which Estimate Is Appropriate?

The official USDA estimate of net farm income measures the proprietary income and corporate profits generated by U.S. farming and ranching operations. Net farm income is a measure of the farm sector's production contribution to Gross Domestic Product (GDP), about 0.8 percent in 1991, and an indicator of the sector's economic performance. It is the appropriate measure to use in examining farm sector performance over time, and to compare farm sector performance with that of other sectors of the U.S. economy. USDA net farm income estimates are used by the U.S. Department of Commerce to measure the agricultural components of the National Income and Product Accounts.

Estimates of farm sector and business income are inappropriate measures of the financial well-being of farm operator households, just as GDP is an inappropriate measure of the financial well-being of U.S. households. As with sector farm income, GDP estimates are useful in assessing performance over time of the national economy, or in comparing U.S. economic performance to other countries.

Neither GDP nor farm sector income, however, is designed to provide detailed information about the well-being of U.S. households. For instance, the U.S. aggregate estimates of cash receipts, Government payments, production expenses, and net income represent all production agriculture. The 2.1 million farm operator households are a subset of households associated with farms. In addition, only one-fifth of U.S. farm households is responsible for two-thirds of this production. The aggregate estimates, therefore, mask the diversity of financial situations of the many farm households.

The principal source of socio-economic information on U.S. households is the Census Bureau's Current Population Survey (CPS), which includes estimates of unemployment, poverty, and household income. Because farm households now make up only about 2 percent of all U.S. households, however, the CPS is not a very reliable source of information on farm households. For this reason, the FCRS, which surveys only farming operations, has for the past several years collected socio-economic information on farm operator households as well as information on farm businesses. Thus, USDA has survey data collected directly from farm operators that provide information on the level and distribution of farm operator household income.

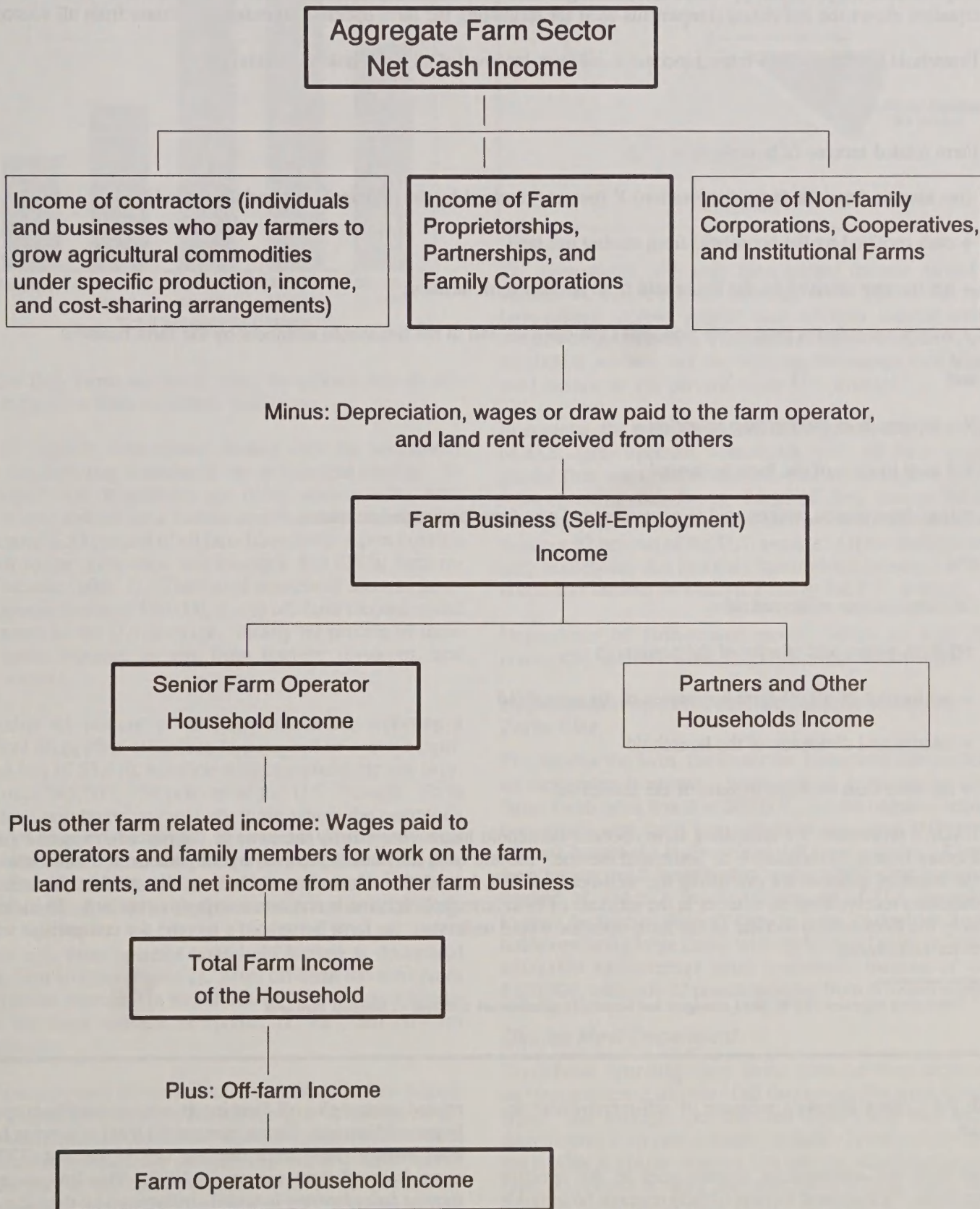
Farm Household Income Similar to All U.S. Households

Farm operator households' income from all sources averaged \$36,542 in 1991, about the same as the average for all U.S. households (\$37,922). However, the diversity of economic well-being of farm operator households cannot be adequately explained by a single number such as average household income. About one-quarter of operator households received low total household income; they had either negative income or positive income less than \$10,000 (figure 1). At the other extreme, one-fifth had income in excess of \$50,000. The range of incomes across households can be explained by looking at the variety of sources of income and characteristics of the farms and households.

The total income of farm operator households includes income from both farm and nonfarm sources. It measures the household's commitment of its labor and managerial resources to a combination of farm and off-farm employment, as well as income from interest, dividends, and other unearned sources. The farm component of total household income is defined to measure self-employment farm-related income available to the operator household. This concept of income is consistent

The editors thank Janet Perry and Bob Hoppe, Agriculture and Rural Economy Division, ERS, for contributing this section on farm operator households.

Getting from Aggregate Farm Sector to Household Estimates of Income



Computing Household Income

Household income comes from both farm and nonfarm sources. Because the FCRS surveys only the farm's principal operator and his or her family, off-farm income data on any partners, landlords, or others involved with the operation are not known. Households associated with farms are a subset of the farm sector. Farms organized as non-family corporations, cooperatives, or whose hired manager does not receive any of the net income are excluded. The following equation shows the individual components used for estimating the farm operator household's income from all sources:

Household income = farm-related income + off-farm income (of all household members)

where:

Farm related income of household =

(net income from the farming operation) X (percent received by the principal operator's household)

+ cash received by the household from renting out land

+ net income received by the household from another farm business

+ wages and salaries paid to the principal farm operator and to the household members by the farm business

and,

Net income from the farming operation =

net cash income of the farm business ¹

minus depreciation, wages paid to operators, and rent from land rented to others

and,

Off-farm income of household =

off-farm wages and salaries of the household

+ net income of all off-farm businesses of the household

+ interest and dividends of the household

+ all other cash off-farm income of the household.

USDA's procedures for measuring farm operator household income are *exactly* the same as the procedures used by the Census Bureau to measure U.S. household income. Income from all sources received by all persons in a household is the standard measure for evaluating the well-being of U.S. households. Including the income that all farm household members receive from all sources in the estimate of farm household income is consistent with this standard. To include only the farm-related income of the farm operator would understate the farm household's income for comparison with other households.

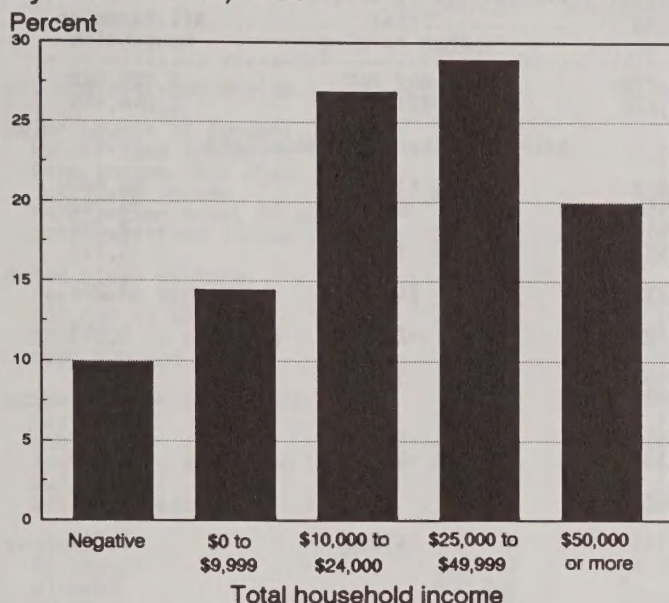
¹ Farm labor expenses paid to hired managers and household members are deducted as business expenses.

with the Census Bureau's measure of self-employment income.

Most farm self-employment income goes to the operator household. Farm-related income of farm operator households includes farm self-employment income as well as other farm-related income such as that from renting out acreage. Farm-

related income plus off-farm income equals total farm operator household income. Eleven percent (\$3,994) of average household income came from farming and 89 percent (\$32,549) came from off-farm sources in 1991. This low average of income from farming is heavily influenced by the 1.5 million households operating small farms with sales under \$50,000.

Figure 1
Distribution of total farm operator households by total income, 1991



Because their farms are small, these households rely on off-farm income for their economic well-being.

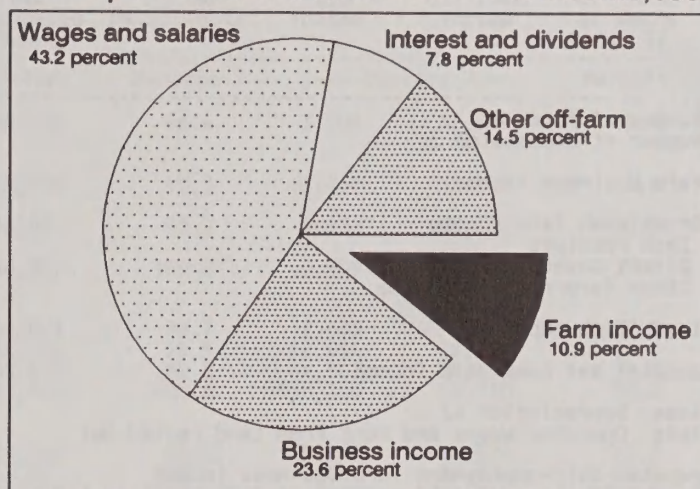
Low or negative farm-related income does not necessarily mean that operator households are in financial trouble. To understand how households are doing economically, both farm-related and off-farm income must be examined together. For example, 55 percent of all farm households report farming as their major occupation and averaged \$10,228 in farm-related income (table 1). Their total household income, however, averaged almost \$30,000, due to off-farm income, about 77 percent of the U.S. average. Nearly 60 percent of these households reported income from interest, dividends, and other sources.

The other 45 percent of all farm households reporting a principal occupation other than farming had an average farm-related *loss* of \$3,610, but their total household income averaged over \$45,000, 120 percent of the U.S. average. Farm operator households, particularly those where the operator's primary occupation is farming, have a relatively large average net worth of \$402,626, compared with the \$92,017 (in 1988, the latest available data) for all U.S. households. This is mainly a reflection of the capital-intensive nature of farming.

On average, farm operator household income is dominated by off-farm sources (figure 2). Most off-farm income comes from earned sources. In two-thirds of farm operator households, the farm operator or spouse, or both, had off-farm employment.

But these averages do not reflect the variation in farm households' dependence on farm-related income. Although on average most operator household income comes from off-farm sources, some households are more dependent on farm-related income than on off-farm income. In 1991, 8.2 percent received no off-farm income, and another 13.2 percent received more income from their farm than from off-farm sources (table

Figure 2
Farm operator households' sources of income, 1991



2). Households with only farm-related income earned an average of \$18,790 from farming, while households with farm-related income greater than off-farm income earned \$46,859 from farming. The latter group also reported over \$10,000 in off-farm income, bringing the average total household income to 150 percent of the U.S. average.

In contrast, the members of the third group--the 78 percent of U.S. farm operator households with off-farm income greater than farm-related income--lost an average of \$4,731 from operating their farms. Large off-farm income for this third group (\$39,712), however, raised total household income to about 92 percent of the U.S. average. Of the three groups, only households that had only farm-related income had total household income substantially below the U.S. average.

Dependence on farm-related income differs by farm size, commodity specialization, and region and county type.

Dependence on Farm-related Income Varies by Farm Size

The smaller the farm, the lesser the household's dependence on farm-related income. Because it is common for small farms (with sales less than \$50,000) to have negative returns, households with small farms received more than 100 percent of total household income from off-farm sources. Despite farm losses, small farms had an average 1991 total household income of \$34,022, nearly 90 percent of U.S. household income, because of their off-farm income. In contrast, households operating large farms with agricultural sales of at least \$500,000 had average total household income of over \$150,000, with only 22 percent coming from off-farm sources.

Dairies Most Dependent

Households operating dairy farms were the most dependent on farm sources of income of all the commodity specialization types. On average, they received slightly less than half of their income from farm sources--probably because dairy farming is labor intensive--leaving less time for other employment. Over 80 percent of dairy operators spent at least 2,000 hours per year working on their farms. In addition, dairy farms often need family members for farm work, making it difficult

Table 1--Average farm business and household incomes of farm operator households by major occupation of operator, 1991

	Major occupation of operator 1/		All farms or households
	Farming	Other than farming	
Number of farms 2/	1,141,772	922,787	2,105,060
Number of households 3/	1,124,479	921,976	2,046,454
Farm business income:	Average dollars per household		
Gross cash farm income	94,027	11,531	56,860
Cash receipts	83,556	9,623	50,252
Direct Government payments	4,519	823	2,854
Other farm-related income	5,952	1,075	3,755
less: Cash expenses	76,232	14,161	48,267
equals: Net cash farm income	17,795	-2,630	8,593
less: Depreciation 4/	7,680	1,536	4,912
less: Operator wages and rent from land rented out	1,084	247	707
equals: Self-employment farm business income	9,031	-4,413	2,974
Household share of self-employment farm business income	7,307	-4,453	2,009
plus: Operator wages and rent from land rented out	1,084	247	707
equals: Self-employment income from farming	8,391	-4,206	2,716
Income to farm operator households:			
Farm income to household	10,228	-3,610	3,994
Share of self-employment farm income	8,391	-4,206	2,716
Other farm income to household 5/	1,837	596	1,278
plus: Total off-farm income	18,860	49,244	32,549
Wages, salaries, and non-farm businesses	10,347	41,550	24,404
Percent reporting	46.7%	85.9%	64.4%
Interest, dividends, transfer payments, etc.	8,513	7,694	8,144
Percent reporting	70.2%	60.5%	65.8%
equals: Farm operator household income	29,088	45,633	36,542
Distribution of household income (percent):			
Less than \$15,000	44	20	33
\$15,000-\$37,999	32	42	37
\$38,000 and over	24	38	30
Household net worth 6/	402,626	240,208	329,575

1/ Major occupation is the one in which the operator spent the most time working. 2/ Number of farms is all farms regardless of legal organization and includes proprietorships, partnerships, family corporations, non-family corporations, and cooperatives. 3/ Number of households is a subset of farms and includes those households operating closely-held farms organized as proprietorships, partnerships, and family corporations. The household definition excludes farms organized as non-family corporations, cooperatives, or whose hired manager does not receive any of the net income. 4/ Consistent with Census Bureau's definition of self-employment income, depreciation expenses are subtracted from net farm income before the allocation to the household. 5/ Other farm income to household includes amounts that family members are paid to work on the farm and net income from a farm business other than the one being surveyed. 6/ Household net worth is the share of the farm assets owned by the household and other non-farm assets minus the share of the farm debt owed by the household and other non-farm debt.

Source: 1991 Farm Costs and Returns Survey, all versions, expanded to represent all farms.

for other household members to work off-farm. Although, on the average, dairy operator households had the largest farm-related income, they had the lowest average off-farm income. Thus, their total household income was only 72 percent of the average U.S. household income.

Households least dependent on farm-related income tended to specialize in livestock enterprises other than dairy or red meats. These operators were most likely to have a major occupation other than farming. Eighty-five percent of these farms had sales less than \$50,000 in 1991. Consistent with their small-farm profile, these farms typically have lost money (on average) according to 1988-91 FCRS data.

Regional Incomes Vary

Midwest farm operator households depended on farm-related income more than farm operator households in other regions. In the Midwest, average farm-related income accounted for about 22 percent of average operator household income, in contrast to less than 10 percent in the other regions. And, Midwestern operators were more likely to indicate farming as their major occupation. Total income per operator household was highest in the West (\$54,344), largely because of high off-farm income.

One might expect the reliance on farm-related income to be greater in the 521 farming-dependent U.S. counties, where at least 20 percent of local earned income comes from farming. Farms tend to be large in these primarily Midwestern counties, and off-farm employment opportunities may be more limited.

Table 2--Levels and sources of farm operator households' income, 1991

	Number of households	Distribution of households	Total household income	Income relative 1/ Percent	Farm income	Off-farm income	Off-farm as share of total 2/
	Number	Percent	Dollars	Percent	-----Dollars-----		Percent
All operator households	2,046,454	100.0	36,542	96.4	3,994	32,549	89.1
Major source of income:							
No off-farm income	168,396	8.2	18,790	49.5	18,790	0	0.0
Farm income less than off-farm income	1,608,751	78.6	34,981	92.2	-4,731	39,712	113.5
Farm income equal or greater than off-farm income	269,307	13.2	56,967	150.2	46,859	10,108	17.7
Sales class of farm:							
Less than \$50,000	1,509,135	73.7	34,022	89.7	-2,663	36,685	107.8
\$50,000 to \$249,999	435,981	21.3	30,156	79.5	10,934	19,222	63.7
\$250,000 to \$499,999	61,784	3.0	69,312	182.8	44,507	24,805	35.8
\$500,000 and more	39,554	1.9	151,919	400.6	118,209	33,710	22.2
Commodity specialization:							
Cash Grain	372,083	18.2	33,566	88.5	8,992	24,574	73.2
Other crop	481,771	23.5	46,871	123.6	7,134	39,736	84.8
Beef, hogs, and sheep	870,827	42.6	33,719	88.9	-185	33,904	100.5
Dairy	156,039	7.6	27,127	71.5	12,623	14,504	53.5
Other livestock	165,734	8.1	36,897	97.3	-2,526	39,423	106.8
Region:							
Northeast	142,002	6.9	37,889	99.9	1,592	36,296	95.8
Midwest	800,309	39.1	32,098	84.6	7,098	25,000	77.9
South	816,171	39.9	34,385	90.7	2,004	32,382	94.2
West	287,972	14.1	54,344	143.3	2,192	52,152	96.0
County type:							
In farming-dependent counties	257,791	12.6	34,454	90.9	8,091	26,363	76.5
In other counties	1,788,663	87.4	36,843	97.2	3,403	33,440	90.8
Operator's age:							
Younger than 35	194,381	9.5	30,289	79.9	6,606	23,683	78.2
35-44 years	428,549	20.9	35,525	93.7	3,055	32,470	91.4
45-54 years	466,271	22.8	49,099	129.5	4,876	44,223	90.1
55-64 years	445,653	21.8	34,789	91.7	5,073	29,716	85.4
65 years or older	511,601	25.0	29,853	78.7	2,043	27,810	93.2
Operator's major occupation:							
Farming	1,124,478	54.9	29,088	76.7	10,228	18,860	64.8
Other than farming	921,976	45.1	45,633	120.3	-3,610	49,244	107.9
Hours operator worked on farm:							
Less than 500 hours	461,350	22.5	44,916	118.4	754	44,163	98.3
500 to 999 hours	403,394	19.7	38,032	100.3	-1,775	39,807	104.7
1,000 to 1,999 hours	531,716	26.0	33,154	87.4	-1,393	34,546	104.2
2,000 hours or more	649,995	31.8	32,446	85.6	14,280	18,166	56.0

1/ Total household income (column 3) divided by U.S. average household income of \$37,922. 2/ Income from off-farm sources can be more than 100 percent of total household income if farm income is negative.

Source: 1991 Farm Costs and Returns Survey

Yet, in farming-dependent counties, farm operator households still received--on average--about 77 percent of their 1991 income from off-farm sources.

Operators' age, major occupation, and hours devoted to farming are also important in explaining farmers' dependence on farm income.

Farmers Tend To Be Older than Other Workers

The FCRS reported an average farm operator age of 53, compared with an average of 40 years for all full-time, year-round U.S. workers. Unlike wage and salary workers, farm business owners usually do not have a set retirement age. Operators may phase out of farming gradually, reducing work time and farm size as they grow older. Elderly operators (age 65 and older) worked fewer hours per year on their farms (1,204) than operators in other age groups, and 87 percent of their farms had sales less than \$50,000.

This phasing out of farming resulted in very low average farm-related income, which reduced total household income. While households with elderly operators had an average income of only 79 percent of the U.S. average for all households, for their age group, their income averaged 122 percent of the U.S. average.

Households with an elderly operator received almost all of their total income from off-farm sources. Nineteen percent of their off-farm income came from interest and dividends, reflecting savings and investments by these households during earlier years. Forty-five percent came from other unearned income such as Social Security.

Many households with an elderly operator had substantial assets. The average net worth of their farms was \$365,463. This large net worth can cushion consumption from relatively low levels of current income. This is not an option for most older U.S. workers who are not in a comparable wealth position.

Table 3--Selected characteristics of farms and operator households whose operator's major occupation is farming and age is under 65 years, 1991

	Household income			All households
	Less than \$15,000	\$15,000-\$37,999	\$38,000 and over	
Number of households 1/ Share of all households	305,135 40.6%	228,988 30.5%	217,710 29.0%	751,833 100.0%
Operator's average age	47	48	47	47
Operator's education:				
Percent completing less than high school	25.7%	19.6%	11.1%	19.6%
Percent with college degree or beyond	10.6%	11.8%	20.5%	13.8%
Income from wages, salaries, and non-farm businesses:				
Average income for all households	\$4,558	\$10,704	\$27,777	\$13,154
Percent of households reporting income	47.4%	61.5%	70.6%	58.4%
Average income per reporting household	\$9,615	\$17,404	\$39,354	\$22,519
Farm business:				
Average acres owned	293	261	482	338
Average acres operated	833	725	1,308	938
Average gross sales	\$68,293	\$65,496	\$202,685	\$106,358
Average asset value	\$429,854	\$372,710	\$701,950	\$491,241
Average direct Government payments	\$4,304	\$3,966	\$9,364	\$5,666
Geographic distribution:				
Percent in South	33.2%	31.7%	29.7%	31.7%
Percent in Midwest	45.7%	50.4%	49.2%	48.1%

1/ Number of households is a subset of total farms and includes those households operating closely held farms organized as proprietorships, partnerships, and family corporations. The household definition excludes farms organized as non-family corporations, cooperatives, or whose hired manager does not receive any of the net income.
Source: 1991 Farm Costs and Returns Survey

For all U.S. households, average income peaked at \$50,700 when the householder was in the 45-54 age group. For farm operator households, average income also peaked in this age group at \$49,099. This operator household income was 130 percent of average U.S. household income for all ages and 97 percent of U.S. household income for those in the 45-54 age group. Members of farm operator households in this age category reported the largest off-farm income (\$44,223), mostly from earned sources. The operators worked on their farms an average of 1,565 hours per year, and their households received an average farm-related income of \$4,876.

Unlike elderly operators, operators under age 65 received most of their off-farm income from earned sources. For example, households with operators in the 35-44 age bracket received about the same share of total income from off-farm sources as households with an elderly operator. But 93 percent was from wages, salaries, and self-employment income.

Like those who are elderly, operators in the youngest category (younger than age 35) had relatively low average household income. But, their total income was 93 percent of the U.S. average for households headed by a person under 35. Their low total household income reflects low off-farm income, rather than low farm-related income. They actually had the highest average farm-related income (\$6,606) of all the age categories. Young operators devoted more hours of work per year on their farms (1,935 hours) than other operators. Like their nonfarm counterparts, young farmers likely are devoting their energy and financial resources to building their business.

Operator's Major Occupation

Fifty-five percent of U.S. farm operators consider farming as their primary occupation. Their average household income

was 77 percent of the average for all U.S. households. This appears to result more from low off-farm income than from low farm-related income. They received an average of \$10,288 in farm-related income, compared with a loss of \$3,610 for other households. In comparison, households with operators who did not consider themselves primarily farmers had total income that was 120 percent of the U.S. average.

Again, there is more to the story when major occupation is further sub-divided by age of operator. Operators reporting farming as their major occupation are twice as likely to be elderly as operators with other major occupations.

Hours of Farm Work

Nearly one-third of operators worked 2,000 hours or more per year on their farms. In an off-farm job, about 2,000 hours per year would be considered full-time work. Households with full-time operators had \$14,280 in farm-related income, compared with a small negative or small positive income for households with operators working fewer hours. Households with a full-time operator received 44 percent of their total household income from farm sources. Their average total household income was 86 percent of that for all U.S. households.

Full-time operators were more likely to specialize in cash grains or dairy than other operators. Nearly two-thirds of the farms with full-time operators were of commercial size, with sales of \$50,000 or more. Average farm net worth was \$486,502, substantially higher than the average for smaller farms with part-time operators. Households with a full-time operator had a total income of \$32,446, which is about 15 percent below the average for all U.S. households.

Consider households running commercial-sized farms where the operator's main occupation is farming and the operator works 2,000 hours or more per year on the farm. Households running these full-time commercial farms received farm-related income of \$25,007, 64 percent of their total household income. Combining their farm-related and off-farm income, household income was higher than both the U.S. average and the average for other farm households.

These full-time commercial farms are very important to U.S. agriculture. Although they made up less than a fifth of all family farms, they produced nearly two-thirds of the value of farm production in 1991. Operators were younger and better educated than others. About one-third specialized in cash grains and one-fourth specialized in dairy. Their farms also received three-fifths of direct Government farm program payments to households. Their average farm net worth was \$560,993, or approximately twice that of other farms.

Prospects for Low-Income Farm Households

Improving their income situation poses a major challenge for relatively poor farm operator households (income of less than \$15,000), where farming is the operator's major occupation. The production potential of their farms (given current acreage, capitalization, etc.) is limited, particularly compared with farms operated by households with a household income of \$38,000 or more (table 3). As a result, an increase in production-related Government payments, typical of current support programs, would generate too little additional income to significantly improve their overall income situation.

Young, low-income farm operators may be able to expand their farms with the help of beginning farmer programs, but they constitute only 16 percent of the low-income group. Given continuing trends in farm numbers, most of the low-

income farm operator households will not achieve sufficient scale to overcome this impediment to higher income.

The most remarkable difference among the farm operators by income class is *not* their farm business characteristics, but their educational attainment. More than a quarter of all low-income farm operators have less than a high school education. This translates into two kinds of impediments. First, they are less likely to have nonfarm earned income (fewer than half), and their nonfarm earnings are low. It is their low nonfarm income that primarily distinguishes them from the other "full-time" farmers. Second, it appears likely that their educational deficit may also make them less successful in farming, especially as that business becomes increasingly high-skill and sophisticated. Thus, what has been traditionally treated as a "farm" issue may really be more a human capital--education and skill--issue. This should be no surprise, however, since it is simply another manifestation of the broader problem facing the U.S. workforce.

Many low-income farm operator households also have limited opportunity to blend farm and nonfarm sources of income to improve their situation because of the current structure of the local rural economy. This is especially true in the Great Plains and Midwest, where there has been little real diversification of employment and farming employment has declined for decades. And the limited opportunity to earn off-farm income emerged as a new factor in the South in the 1980's as growth in rural manufacturing employment stalled. It appears clear from the situation of all other farm operator households that diversification of income sources is the most viable strategy to improve the economic well-being of low-income farm households. This makes successful rural economic development a critical element in the future income situation of both farm and nonfarm rural households.

Cash Receipts May Reach Another High in 1993

Lower feed grain and rice receipts from weak prices for last year's record production are being offset by stronger soybean, fruit, vegetable, and greenhouse receipts. Livestock and poultry prices are also rebounding.

In 1992, growing conditions for the major U.S. crops were near perfect. Yield records were set for soybeans, cotton, and most grains. Wheat prices bounced back from a disastrous 1991. Receipts were up for all crops except cotton, for which high world production drove down prices. The livestock sector was another story. Cattle, hog, and egg prices had been falling for over a year, causing red meat receipts to fall 4 percent and poultry and egg receipts to fall nearly 2 percent. On the other hand, dairy prices climbed out of their late 1991 slump, recovering most of what was lost the previous year. Overall, total 1992 cash receipts rose 1 percent. Expenses were essentially steady for the third year in a row, leaving net cash income of \$60 billion, up 3-4 percent from 1991.

Receipts Could Exceed 1992 Figure

Farmers' planting intentions and USDA production forecasts point to even higher 1993 crop and livestock receipts than last year. With a forecast 6- to 8-percent increase in direct Government payments and expenses up less than 1 percent, net cash income could average \$57-\$65 billion. This might just surpass the 1990 record. For net farm income, the record crop production last year added nearly \$4 billion to inventories, leaving 1992 net farm income at \$50 billion. For this year, the inventory adjustment is forecast at minus \$1 billion, which will drop net farm income 4-6 percent. (Net inventory adjustments are procedures for allocating all of a given year's output to that year, rather than allowing it to be sold in other years--for consistency with national income accounting.)

Fruit, Vegetable, and Greenhouse Sectors Improve

Over the past few years these three large crop sectors, each comprising many commodities, have become more important to total crop receipts. Fruits and vegetables each account for about 12 percent of the total and each has been steadily growing. Fruit and vegetable price indexes have been rising this year but supplies are down. The greenhouse and nursery sector is also growing in importance with about 10 percent of total crop receipts. For 1993, receipts for these three combined are forecast up \$500-\$700 million, partially offsetting the forecast declines in field crop receipts and keeping total crop receipts at about the 1992 level.

Livestock Sector Bounces Back

While field crop producers are experiencing falling prices from last year's record production, livestock producers are experiencing a recovery. Although not back to 1990-91 levels, cattle and hog prices are \$4-\$5 above last year. Red meat receipts are forecast up 2-4 percent for 1993 and poultry and egg receipts are forecast up 6-8 percent. Dairy receipts could fall slightly, but not to the 1991 level.

Upcoming Revisions

ERS uses the most current and best available data to develop its estimates of net farm income. As better data become available, they are incorporated into the accounts and revised historical estimates are prepared to reflect the new information. This summer ERS and USDA's National Agricultural Statistics Service (NASS) will implement new procedures for estimating production expenses, farm-related income, and some of the noncash income components of the State and national accounts. For the first time, the annual Farm Costs and Returns Survey (FCRS) will be used directly for these estimates.

Previously, the FCRS data adjusted *U.S. Census of Agriculture* estimates between census years. This procedure was reviewed in this magazine (AFO-39, December 1990) and in *Agriculture Handbook No. 671*, Vol. 3, November 1988. The reason for the change is the newly developed ability to adjust the FCRS to fully account for all U.S. farms. In the past, undercounting of small farms in the FCRS made it difficult to compare information in the national accounts with studies using FCRS data.

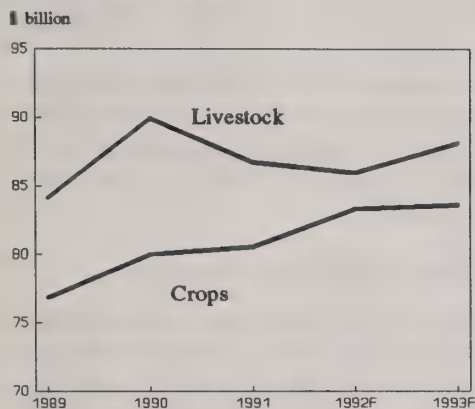
In September 1993 ERS and NASS will jointly release the new estimates (ERS in this magazine and NASS in its annual *Farm Production Expenditures*). The magnitude of the changes will not be known until the 1992 FCRS data become available and the 1991 data are resummarized. The accounts will be revised back to 1988 to reflect the new procedures.

Direct Payments Rise for Second Year, Expenses Hold for Third

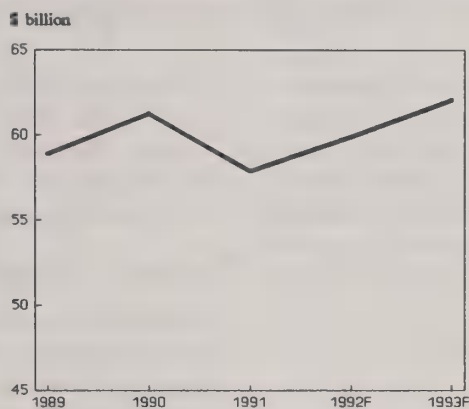
After a 6-year run of annual declines, Government payments rose in 1992 and are forecast up again in 1993. Deficiency payments for all program commodities should rise as market prices fall. Current forecasts show 1993 payments of \$9-\$11 billion. The greatest forecast increase is nearly \$1 billion for feed grains. Conservation rental payments will also continue rising, but disaster payments are likely to be down \$300 million. Both cash and total production expenses have remained relatively steady since 1990. The increases averaged less than 1 percent per year, much lower than the general rate of inflation. For 1993, expenses could be lower for feed (due to lower feed grain prices) and hired labor. Other expense components will probably rise, but only marginally.

Higher cash receipts and direct Government payments are leading to higher net cash income for 1993

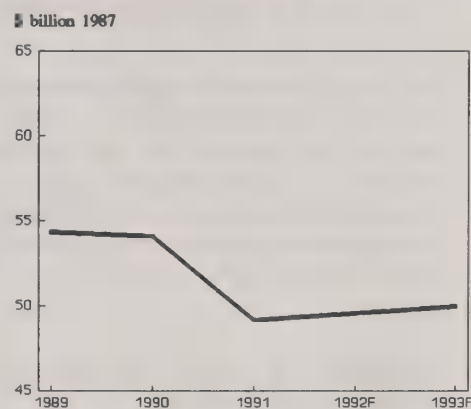
Cash receipts



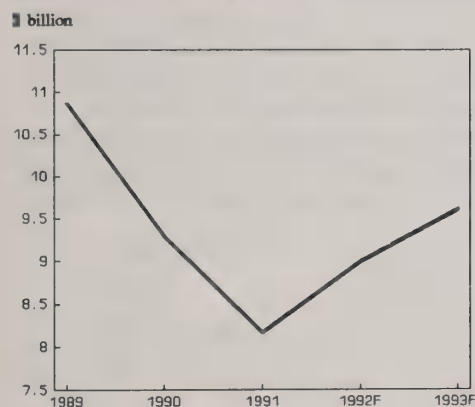
Net cash income



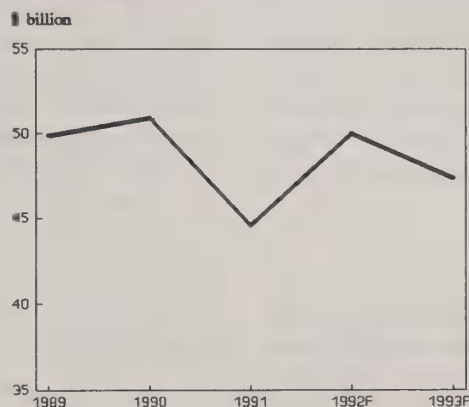
Real net cash income



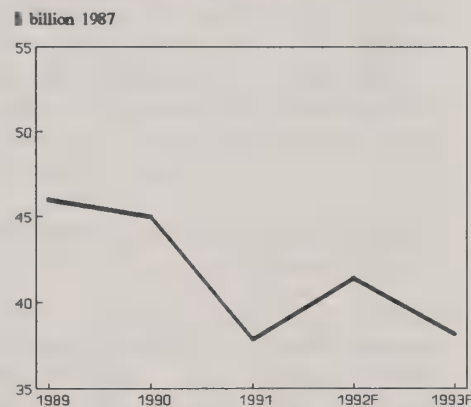
Government payments



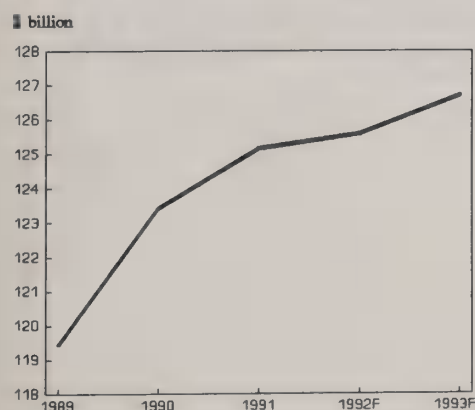
Net farm income



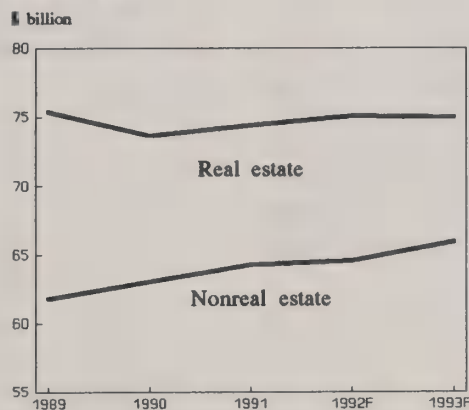
Real net farm income



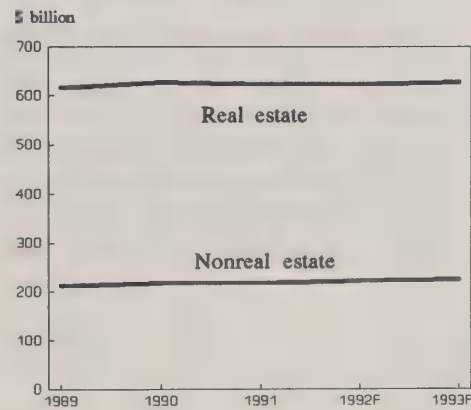
Cash expenses



Farm debt



Farm assets



Improving Grain and Livestock Prices Boost Midwest Incomes

With 1993 corn and soybean receipts improving and hog and beef prices recovering from last year, the Midwestern and South Central regions will be the most affected. U.S. operations with gross sales over \$100,000 will see net cash incomes rise 1-4 percent.

The large Midwestern region accounts for over 40 percent of U.S. crop receipts, livestock receipts, production expenses, and net cash income. The region is the major U.S. producer of wheat, feed grains, and red meats. Each of these commodity sectors is forecast to see strong prices for 1993, resulting in improved net incomes for Midwestern farmers. Somewhat lower 1993 milk prices will adversely affect the Northeastern region.

Largest 3 Percent of Farms Receive 35 Percent of Income

An examination of U.S. farm businesses by size reveals that the largest farms (gross sales of \$500,000 or more) receive over 35 percent of crop receipts and livestock receipts, and pay 35 percent of cash expenses. However, these operations receive only 18-20 percent of direct Government payments. If farms in the next smallest size (\$250,000-\$499,999) are included, nearly 60 percent of all net cash income accrues to only 7 percent of U.S. farms. For 1993, net cash incomes are forecast to increase 1-4 percent for these large operations.

Expenses Take a Larger Share of Small Farms' Income

Farms with sales under \$40,000 are normally considered non-commercial and are frequently part-time farming operations. Sixty-five percent of U.S. farms fall into this category. While numerous, these operations account for only 1-2 percent of total net cash income, due in large part to their accounting for 13 percent of cash expenses. For 1993, small-farm net cash income is forecast to turn positive after being negative in 1992.

Crop Farm Incomes Down, Livestock Up

Net cash incomes for most types of crop farms are forecast down for 1993. Tobacco farms could show the largest percentage drop, followed by cotton farms. Cash grain farm incomes are forecast steady to down slightly. The mix of cash grains will determine the direction, with corn and soybean prices up but wheat prices steady and other feed grain prices down.

Except for dairy farms, whose net incomes are forecast down 4-6 percent, livestock operations should see higher 1993 incomes. Red meat operations are benefiting from stronger beef and hog prices. Similarly, strong broiler and egg prices are helping the poultry/egg complex.

Number of Highly Leveraged Farms Declines

The 1991 financial positions of U.S. farms and ranches shifted some, according to USDA's latest Farm Costs and Returns Survey. The percent of commercial farms with high debt and positive net incomes decreased, while the percent with low debt but negative net farm incomes increased slightly. This was pretty much the case across sales classes, regions, and farm types. Although in the aggregate the survey showed no annual change in the percent of financially vulnerable operations, regions and farm types had wide variation. In particular, Southeastern producers were much better off than a year earlier, due in large part to improvement on the debt side. Northeastern and Pacific producers were just the opposite as low milk and cotton prices, combined with the effects of the freeze on California citrus, caused the percent of vulnerable farms to increase.

Figure 3
U.S. Regions



Table 4--Strong livestock prices helping incomes of smaller operations

Sales class	Cash receipts		Direct Government payments	Gross cash income	Cash expenses	Net cash income
	Crops	Livestock				
Million dollars						
1992F						
\$500,000 or over	33,440	32,862	1,737	69,340	44,164	25,176
\$250,000-\$499,999	15,234	10,023	1,602	27,460	18,605	8,856
\$100,000-\$249,000	20,674	21,450	3,044	46,696	29,141	17,555
\$40,000-\$99,999	9,233	13,117	1,675	25,510	17,114	8,396
\$39,999 or less	4,774	8,543	934	16,517	16,562	-45
1993F						
\$500,000 or over	33,732	33,766	1,855	70,684	44,419	26,265
\$250,000-\$499,999	15,243	10,200	1,711	27,769	18,800	8,970
\$100,000-\$249,000	20,683	21,759	3,252	47,255	29,449	17,806
\$40,000-\$99,999	9,230	13,618	1,788	26,154	17,264	8,890
\$39,999 or less	4,780	8,826	998	16,918	16,762	156

F = forecast.

Table 5--Distribution of commercial farms by financial position, 1990-91 1/

	Favorable		Marginal income		Marginal solvency		Vulnerable	
	1990	1991	1990	1991	1990	1991	1990	1991
Percent								
All farms	62	61	17	21**	15	12**	6	6
Economic class:								
Sales \$500,000 or more	63	62	15	19	18	13*	4	6
Sales \$250,000-\$499,999	65	58**	11	18**	17	17	7	7
Sales \$100,000-\$249,999	63	62	16	18	16	13**	6	7
Sales \$40,000-\$99,999	62	62	20	24**	13	9**	6	5
Region:								
Northeast	64	58	18	26**	15	9	3	7*
Lake States	63	64	14	14	18	15	6	7
Corn Belt	66	64	17	19	13	12	4	4
Northern Plains	62	59	13	20**	18	13**	7	9
Appalachian	74	69	11	21**	11	8	4	2
Southeast	51	63**	24	21	16	12	10	5*
Delta	51	58	19	21	22	11**	9	11
Southern Plains	57	54	18	26*	16	10	10	10
Mountain	57	58	24	23	15	14	5	6
Pacific	63	61	24	27	9	7	3	5
Production specialty:								
Cash grain	64	62	14	19**	16	13**	6	6
Tobacco	71	79	5	9	23	11*	1	2
Cotton	55	51	15	21	23	16	8	12
Other field crops	49	65**	24	20	17	8**	10	7
Vegetables, fruit, nuts	63	70	24	19	8	6	6	4
Nursery, greenhouse	74	74	14	15	9	9	3	3
Beef, hogs, sheep	61	55**	22	26**	13	10	5	9**
Poultry	56	57	8	20	28	16	8	7
Dairy	67	62	12	19**	16	14	5	6
Other livestock	38	56	39	36	12	5	11	4

** = Change from 1990-91 statistically significant at the 95-percent confidence level.

* = Change from 1990-91 statistically significant at the 90-percent confidence level.

1/ **Commercial farms** are defined as those operations with annual gross farm sales of at least \$40,000. **Favorable farms** have positive net farm income and low debt (debt/asset ratio < .4); **marginal income farms** have negative net farm income and low debt; **marginal solvency farms** have positive net farm income and high debt; **vulnerable farms** have negative net farm income and high debt.

Source: Farm Costs and Returns Surveys, USDA.

New Survey Shows Land Values Up for '93

Real estate values are up 1-3 percent. Debt is up slightly less, leaving equity up 1-2 percent.

Asset values in 1993 are expected to continue the pattern of relative stability exhibited for the past several years. The total value of farm business assets (excluding operator households) is forecast to rise less than 2 percent from the \$856 billion estimated for December 31, 1992. The bulk of the increase is accounted for by the forecast of a small increase (1-2 percent) in the value of U.S. farm real estate. Yearend inventory values for livestock, machinery, and crops are forecast to remain essentially unchanged. Inventory values for purchased inputs and financial assets may increase slightly by the end of 1993.

Changes in aggregate asset values forecast for 1993 are nearly identical to those estimated for 1992, except for the slight increase in the value of livestock inventories in 1992. The value of farm assets increased 1.7 percent (\$14.7 billion) during 1992, from \$841 billion on January 1 to \$856 billion on December 31. Farm real estate accounted for \$10 billion of the increase, while livestock inventories added \$3.2 billion. Small changes in the other line-item assets added the remaining increase.

Farm sector asset value continues to be driven by the relative stability of farm real estate value, which now comprises 74 percent of the sector's total asset value. The percentage changes in the value of farm real estate during 1992 were remarkably consistent across regions of the country. During 1992, eight of the ten farm production regions experienced increases in farm real estate value. The increases ranged from 1 to 3 percent, bracketing the average annual inflation rate for 1992. Total farm real estate value did not change in the

Northeast, while the Pacific region showed a 2-percent decline.

At current inflation rates (2.6 percent for 1992), these small changes in the nominal value of farm assets imply further erosion in the real (inflation-adjusted) value of farm sector assets (see figure 5). The real value of farm assets has generally declined since peaking in 1980. (Only 1987 was an exception, when the real value increased slightly.) The real value of farm assets is now the lowest since 1961.

Debt Level To Rise Slightly

Preliminary indications are that total farm business debt increased less than 1 percent in 1992. This follows a 1.4-percent rise in 1991, which ended 6 consecutive years of debt reduction. Growing net cash income, coupled with expectations of favorable earnings in 1993, indicates farmers appear to have had adequate cash to meet their needs with little additional borrowing. A modest increase in borrowing is expected to be sustained through at least 1 more year, as total debt is forecast to rise over 1 percent in 1993.

Input Suppliers Provide Credit

It appears that any void of available credit has been filled, at least partially, by input suppliers in the form of favorable credit terms to purchasers of their products. In an environment of low interest rates, input suppliers have increasingly viewed credit sales on favorable terms as a cost of doing business in a competitive market. To the extent that these sales have been made to farm operators who were justifiably denied credit by traditional lenders, input suppliers may encounter collection difficulties in the near future.

Despite the tight credit market facing higher risk loan applicants, lenders continue to aggressively pursue qualified borrowers, and competition for quality loans will continue to intensify in 1993. Commercial bank loan balances increased almost \$1.5 billion during 1992, rising for the fifth consecutive year. Commercial bank debt grew steadily during 1988-92, resulting in an increase in outstanding debt of over \$10 billion. Bank loans are expected to increase another \$2 billion in 1993.

Figure 4
Percent change in total farm real estate values,
January 1, 1992 - December 31, 1992

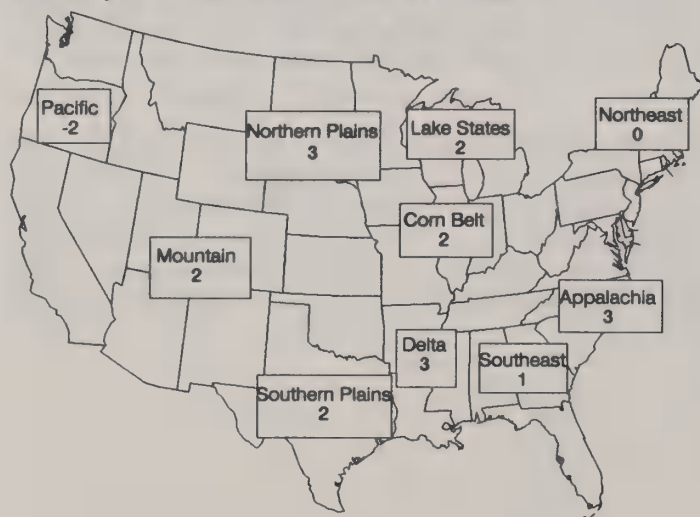


Table 6--Total farm debt increased by almost \$1 billion in 1992, but more than \$50 billion below 1984

Lender	1988	1989	1990	1991	1992P	1993F
-----Million dollars-----			--Billion dollars--			
Real estate	77,634	75,359	73,702	74,446	76	74 to 78
Federal Land Banks	28,372	26,674	25,255	25,100	25	24 to 25
Farmers Home Administration	8,953	8,130	7,580	6,999	6	5 to 7
Life insurance companies	9,018	9,051	9,641	9,495	9	8 to 11
Commercial banks	14,397	15,551	16,165	17,315	19	18 to 20
CCC storage facility	21	12	7	4	*	*
Individuals & others	16,873	15,941	15,054	15,533	16	15 to 17
Nonreal estate	61,734	61,826	63,080	64,308	64	64 to 64
Commercial banks	28,309	29,243	31,267	32,854	33	32 to 35
PCAs and FICBs	8,766	9,490	9,699	10,256	10	9 to 12
Farmers Home Administration	12,899	10,843	9,374	8,213	7	6 to 7
Individuals & others	11,760	12,250	12,740	12,985	13	13 to 15
Total debt (excluding CCC)	139,368	137,185	136,782	138,754	139	139 to 145
Farm Credit System	37,138	36,164	34,954	35,356	35	34 to 36
Farmers Home Administration	21,852	18,973	16,954	15,212	14	11 to 13
Commercial banks	42,706	44,794	47,432	50,169	52	53 to 55
Life insurance companies	9,018	9,051	9,641	9,495	9	9 to 10
Individuals and others	28,654	28,202	27,801	28,522	29	30 to 32

Debt outstanding as of December 31. Excludes operator household debt. * = Less than \$500,000.

Figure 5

Farm assets, debt, and equity

Billion nominal dollars

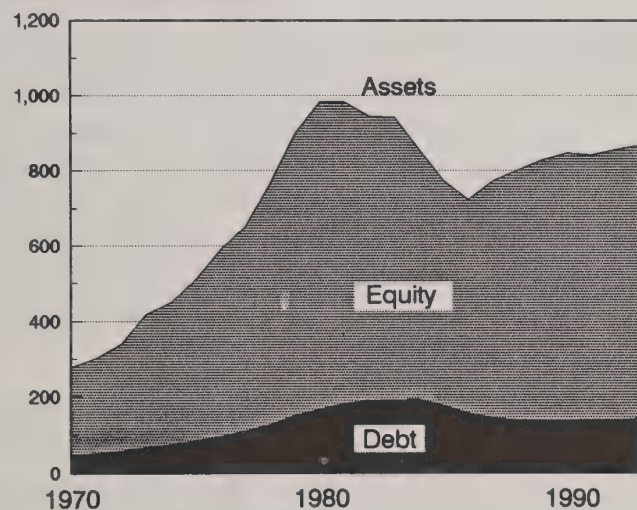
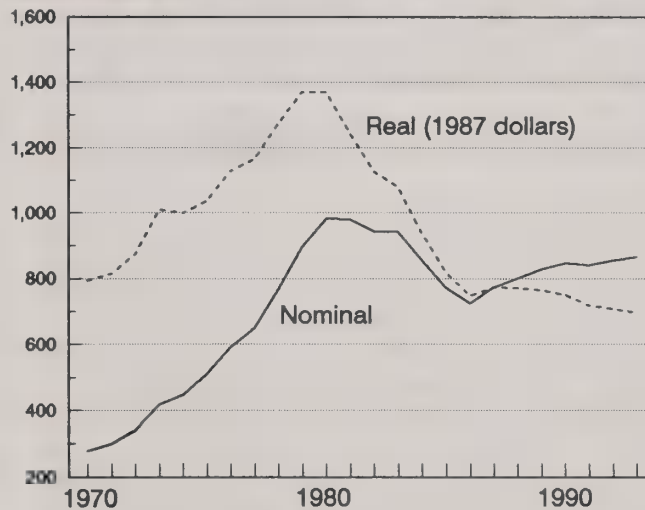


Figure 6

Nominal and real values of total farm assets

Billion dollars



Output and Employment Growth Slower than in Recent Recoveries

Low inflation and interest rates, moderate economic growth, reduced debt burdens, and a favorable value of the dollar should lead to moderate increases in production costs and increased demand for agricultural products.

Broad indicators of the Nation's economic performance show continued slow growth through early 1993 relative to recent previous recoveries. Since bottoming in the first quarter of 1991, real (inflation adjusted) gross domestic product (GDP) has grown 2.1 percent annually. In comparison, real GDP growth averaged 5.1 percent in the first 2 years of recovery following the 1969-70, 1973-1975, and 1981-82 recessions. The slow recovery reflects a number of factors, including the lingering effects of the very large household and corporate debt buildup of the 1980's, weak growth abroad, slow growth in money and credit, continuing weak real estate markets in some regions of the country, and structural shifts in required labor skills. These factors have collectively increased economic uncertainty relative to typical economic recoveries.

The current recovery has seen exceptionally slow growth in nonagricultural employment, which grew at an average of 3.2 percent in the first 2 years after the three recent recessions. Since the first quarter of 1991 (the trough of the 1990-91 recession), employment has grown at an annual rate of only 0.2 percent. Part of the slow growth reflects the historically slow current recovery in consumer and business demand for goods and services, which reduces the demand for additional labor. The slow recovery has increased employer uncertainty about future labor needs. Uncertainty over future labor needs, the high costs of hiring and employee fringe benefits, and a greater than normal mismatch between job skills demanded and supplied in labor markets are apparently slowing hiring as well.

Economic Growth Slowed in First Quarter

Real GDP grew at an annual rate of 0.9 percent in first-quarter 1993 after growing 4.7 percent in fourth-quarter 1992. Consumer spending, which is roughly two-thirds of GDP, grew 1.2 percent in the first quarter after increasing 5.1 percent in the fourth quarter of 1992. Most of the slowing in consumer spending and real GDP growth primarily reflects transitory factors that are not expected to generate a major drag on the economy in coming quarters.

Poor late-winter weather slowed consumer spending and construction activity. In addition, reductions in personal withholding tax schedules, introduced in 1992, reduced tax refunds and consumer spending in the first quarter of 1993. Defense spending fell at an annual rate of almost 16 percent in the first quarter. Although real defense spending is expected to decline in 1993, the rate of decline should moderate sharply.

Business investment spending continues to be a major source of strength to the recovery. Spending on business equipment investment alone grew at an annual rate of over 16 percent in the first quarter and has been especially strong in recent quarters. Business firms have increased equipment spending in response to stronger consumer spending in the second half of 1992, lower capital costs, and continued technological improvements in new business equipment.

A nearly \$37 billion increase in business inventory investment in the first quarter slightly weakens the near term outlook. A large portion of the increase in business inventories appears unplanned and is likely to slow production of goods somewhat in the next couple of quarters as inventories are reduced.

The U.S. net export deficit increased from \$49 billion to just over \$71 billion in first-quarter 1993. Most of the decline in net exports reflects rising imports due to higher growth in GDP and personal income relative to most major U.S. trading partners, especially Germany, Japan, and Great Britain. Most analysts believe that real GDP will grow faster in the United States than in most major trading partner countries in 1993, causing the trade deficit to widen.

However, the increase in the trade deficit will be moderated by a relatively weak U.S. dollar that continues to help the competitive position of U.S. trade. The trade-weighted value of the dollar declined during spring 1993 and is now roughly 40 percent lower than its February 1985 peak. In the long run, a falling real value of the dollar increases net exports by reducing the cost of exports to foreigners and raising the cost of imports in the United States.

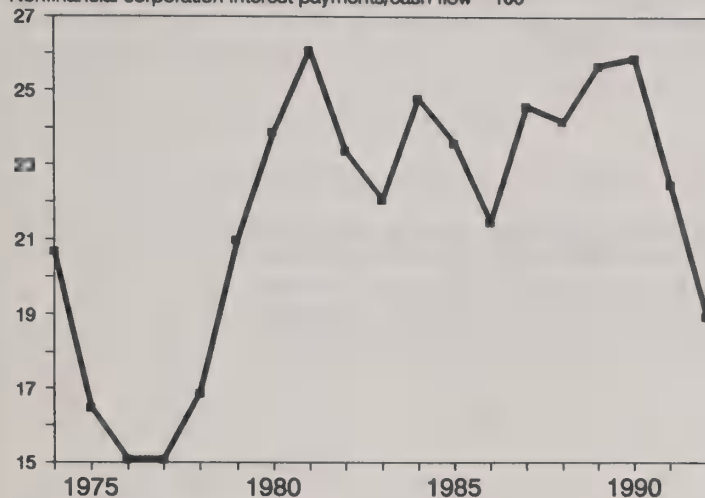
Reduced Consumer and Business Debt Burdens Improve Economic Outlook

One factor slowing the current recovery has been the debt buildup remaining from the 1980's. The debt burden reduced consumption and raised capital costs for firms. Consumption depends on a number of factors, including current income, wealth, and overall liquidity. From 1984 through 1989 an increasing proportion of household personal disposable income went to pay interest on household debt. The rising debt burden reduced consumer liquidity and increased the vulnerability of consumption spending to any fall in current income. Consumer debt burdens were reduced in 1991 and 1992. However, most of the fall in the debt service burden reflects sharply lower interest rates on consumer debt in 1991 and 1992, rather than a significant fall in overall consumer debt.

Figure 7

Corporate debt burdens have fallen

Nonfinancial corporation interest payments/cash flow * 100



relative to income. Consumer debt burdens that are lower and less constraining than in 1989 and 1990, but high relative to the 1970's and 1980's, will continue to constrain consumer spending.

Like the household sector, nonfinancial corporate debt burdens increased in the 1980's. Although lower than in the late 1980's, corporate debt burdens remain high by historical standards. By raising investor concerns over corporate debt burdens, the 1990-91 recession raised the cost of capital (especially the cost of debt relative to equity) particularly for highly leveraged firms. Firms have responded by increasing equity issuance and reducing dependence upon short-term debt. However, corporate debt burdens relative to cash flow remain high by historical standards, especially with the current low interest rates. Therefore, both household and corporate sector debt burdens remain highly sensitive to swings in interest rates.

Moderate Economic Growth, Low Inflation, and Low Interest Rates in 1993

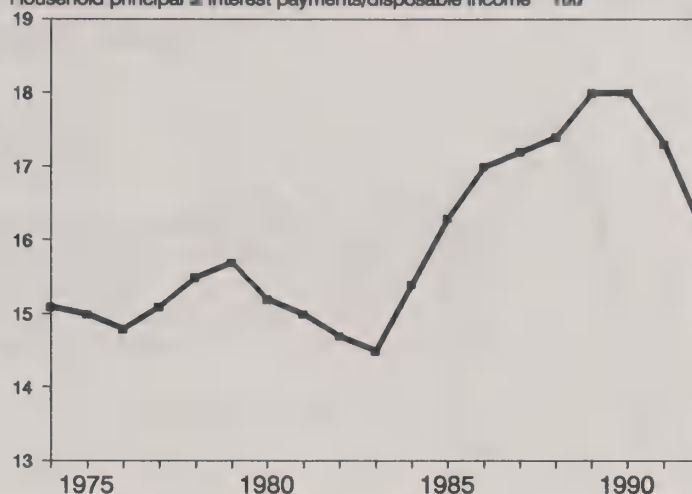
Economic growth should be moderate and slowly accelerate in 1993, while continuing to be constrained by long and short term factors. Long-term factors holding down growth include relatively high (although improving) household and corporate debt ratios, generally weak real estate markets, and continuing adjustments in labor markets to changing required job skills for high demand jobs (such as computer and other high technology skills).

Short-term factors holding down growth include continued slow growth in money and credit and weak growth abroad. However, continued improvement in household and corporate liquidity, greater credit availability from commercial banks, and somewhat stronger growth abroad later in 1993 are likely

Figure 8

Household debt burdens have fallen

Household principal ■ Interest payments/disposable income * 100



to generate a modest acceleration in economic growth in the latter half of the year.

Inflation and interest rates are likely to remain low compared with the last 20 years. Most analysts believe that slight increases in inflation and interest rates are probable, but major increases are not likely. Inflation measures, such as the producer, consumer, and GDP price indexes, for early 1993 indicate that general inflation may move slightly above 1992's roughly 2.5 to 3.0 percent.

However, unemployment and, to a somewhat lesser degree, capacity utilization rates remain at levels normally associated with sufficient slack in labor and product markets to prevent any significant increases in inflation. Wages of private non-agricultural workers increased at an annual rate of only 1.8 percent during August 1992 to April 1993. With inflation expected to remain relatively low, economic growth moderate, foreign credit demand relatively weak, and household and corporate sector credit demands remaining sensitive to increases in interest rates, most analysts believe interest rate increases will be modest in 1993.

Implications for Agriculture

If economic growth picks up as expected in the second half of 1993, domestic demand for agricultural commodities is likely to increase. Inflation and interest rates, although likely to be slightly higher, should remain low, keeping increases in agricultural production costs modest. Foreign demand for agricultural products should be aided by the relatively low real trade-weighted value of the dollar. However, foreign demand for agricultural products will be constrained by weak growth in Japan and most of Europe, including Germany, which is in a recession.

A Sources and Uses of Funds Account for the U.S. Farm Sector

by
Ken Erickson¹

Abstract: As agriculture becomes increasingly capital intensive, greater attention is focused on the processes of capital formation and accumulation. Accordingly, this article provides the framework and estimates a sources-and-uses-of-funds account for the U.S. farm sector. By relating changes in balance sheet accounts to income statements, the account monitors changes in income flows and farm sector wealth.

Keywords: Balance sheet, income statement, equity, capital, sources and uses of funds.

Capital represents the accumulated stock of real wealth including land as well as produced goods. Saving and investment add to the stock of capital. At the farm level, capital refers to the productive, income-generating assets of a firm, including real estate, machinery, livestock, inventories, and cash balances. As agriculture becomes increasingly capital intensive, greater attention is focused on the processes of capital formation and accumulation. Policymakers debate how changes in farm price support and credit policies, as well as in U.S. macroeconomic policies, will affect farm sector capital growth.

Currently, the system of economic accounts for the U.S. farm sector consists of the income and balance sheet statements as published in *Economic Indicators of the Farm Sector*. These estimates are necessary to monitor and evaluate changes in income flows and farm sector wealth. However, Penson (1977) notes the need for a set of accounts that would provide analysts with information on gross saving of farm production sector participants. This would help us to evaluate and forecast farm and nonfarm investments and the extent to which they finance these investments with internal versus external sources of funds.

Flow of funds analysis relates changes in U.S. farm sector income statements to changes in balance sheets. It helps describe how we moved from one year's balance sheet to the next. Penson, Lins, and Irwin (1971) note "Thus, it is important that the sector SAUF statement be definitionally and conceptually consistent with the FIS and BSFS." This article constructs and estimates an updated sources-and-uses-of-funds (SAUF) account for the U.S. farm sector, 1940-91. The work of Penson (1971) and others who have made significant contributions in this area is closely followed.

Sources of Capital

Farm firms acquire capital in a variety of ways. Equity capital is acquired through gifts and inheritances, savings from farm

and off-farm income, and investment through establishment of partnerships or corporations. Borrowing provides control over outside funds that are then used to purchase assets or inputs. Leasing and contract production are increasing sources of equity capital.

The farm sector continues to acquire most of its capital through saving and borrowing. A number of studies have attempted to determine the relative importance of these two major sources.

Tostlebe compared net borrowing (the change in outstanding debt) to the sum of the major elements of capital formation -- purchases of machinery and buildings, land improvements, and the net increase in inventories of livestock and crops and in principal financial assets. He found that borrowing financed a relatively small proportion of capital formation during the first half of this century, except during World War I. Tostlebe also estimated net capital formation by subtracting the depreciation of buildings and machinery from gross capital formation. He then considered the difference between such net capital formation and net borrowing as the net investment financed from farmers' net income. His estimates indicated that such net investment was negative during periods of agricultural depression before 1950.

The Federal Reserve Board published a similar calculation in 1970, but added a major capital flow that Tostlebe had omitted -- an estimate of the capital required to purchase real estate from persons leaving the farm sector. The Board found positive net investment throughout 1950-69 and that net borrowing financed about one-third of farm sector capital formation. However, due both to subsequent USDA revisions in estimates of total farm sector debt and capital investment data, USDA-ERS estimates indicate that most farm sector capital formation has been financed internally through saving, rather than borrowing.

Sources and Uses of Funds

In 1971, Penson, Lins, and Irwin developed a SAUF statement for the U.S. farm sector corresponding to the sector definitions

¹ Agricultural economist, Agriculture and Rural Economy Division, Economic Research Service.

employed in the USDA farm income and balance sheet accounts. The SAUF statements relate changes in balance sheet accounts to income statements, describing movement from one balance sheet to the next. The SAUF statement is based on the premise that total sources equal total uses of funds. Proprietor withdrawals are estimated as the residual which equates total sources to total uses of funds.

The SAUF statement developed here is as follows:

$$UF = \sum_{i=1}^M (GKE_i + \Delta I_i + \Delta FA_i + PW_i + RKG_i)$$

$$SF = \sum_{i=1}^M (CC_i + NFY_i + OFY_i + \Delta FDEBT_i)$$

where

UF = Uses of funds

GKE = Gross capital expenditures

I = Value of livestock and crop inventories

FA = Financial assets, including operator households

PW = Proprietor withdrawals

RKG = Real capital gains on farm assets

SF = Sources of funds

CC = Capital consumption allowances, including operator dwellings

NFY = Net farm income

OFY = Off-farm income

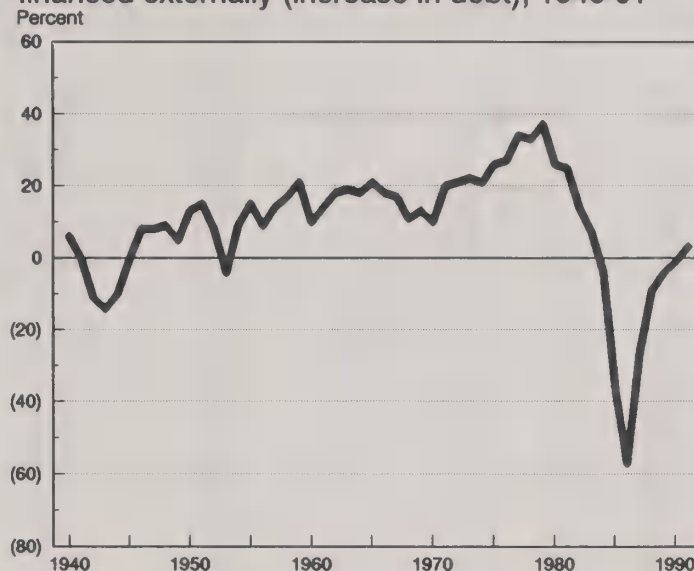
FDEBT = Total farm debt, including operator households

i = each of the 50 States

Real capital gains (losses) on farm assets are included both as a source (and use) of funds, following Penson et al. However, their inclusion is not in total agreement since only a portion of accrued capital gains are actually realized. Tables A-1 and A-2 give the sources and uses of funds for the U.S. farm sector during 1940-91, including real capital gains. The growing relative importance of off-farm income as a source of funds for farm sector investment is shown in figure A-1, as is the relative decline in farm debt as a source. Gross capital expenditures and proprietors' withdrawals are the major sources of funds.

Gross capital expenditures (GKE) are surprisingly steady throughout most of the period, although GKE (and net farm sector investment, or GKE minus capital consumption allowances) dropped rapidly over the 1979-85 farm financial crisis period. These include expenditures on buildings and land, motor vehicles, and machinery and equipment.

Figure A-1
Percent of U.S. farm capital accumulation
financed externally (increase in debt), 1940-91



Proprietor withdrawals are calculated as a residual. Proprietor withdrawals mirror total uses of funds, and equal total sources of funds minus total investment (gross capital expenditures plus value of net change in livestock and crop inventories plus net change in financial assets). Conceptually, proprietor withdrawals may contain income, capital, and financial withdrawals by the proprietor-family enterprise unit. For example, a farm operator family may withdraw funds from the sector by purchasing a motel, a family home in town not associated with the farm operation, or it may invest in nonfarm business financial assets like IRA's, CD's, or mutual funds. The estimated amount of proprietor withdrawals of funds from the farm sector has risen sharply since 1940. This reflects the relative attractiveness of nonfarm sector investments relative to farm sector investments.

Nonfarm equity capital is a significant portion of total farm sector capital accumulation, exceeding farm business capital accumulation during part of the 1970's-90's. Growth in nonfarm equity capital accumulation was particularly rapid in the 1970-91 period, as continuing farm operator families invested more and more funds in nonfarm assets. Since data are lacking on off-farm capital accumulation of farm operator families, the percentage of total personal gross saving used to finance nonfarm equity capital accumulation is likely understated.

Through most of the 1950-70's, less than 20 percent of farm capital accumulation was externally financed (by net increases in farm debt). But this percentage rose sharply, reaching 37 percent in 1979, then plummeted to minus 57 percent (net decrease in farm debt) in 1986. These years correspond to the beginning and end of the "farm financial crisis of the 80's". From 1987 to the present borrowers and lenders have cautiously returned to debt-financed farm capital accumulation.

Comparing the SAUF in deflated dollars with the SAUF in current year dollars allows us to examine sources and uses of

Table A-1--Sources of funds for the U.S. farm sector

	Net farm income	Off-farm income	Net income	Capital consumption	Cash flow	Change in farm debt	Sources excluding capital gains	Real capital gains	Sources including capital gains
Billion dollars									
1940	4.5	2.8	7.2	0.8	8.0	0.3	8.3	0.6	8.9
1941	6.5	3.3	9.7	0.9	10.6	0.0	10.6	0.2	10.8
1942	9.9	3.9	13.8	1.3	15.1	-0.7	14.4	4.3	18.7
1943	11.7	4.4	16.1	1.4	17.5	-0.8	16.6	5.6	22.2
1944	11.7	4.4	16.1	1.4	17.6	-0.6	16.9	4.8	21.7
1945	12.3	4.4	16.7	1.3	18.0	-0.0	18.0	5.8	23.8
1946	15.1	4.6	19.6	1.2	20.8	0.7	21.5	-7.3	14.2
1947	15.4	5.3	20.7	1.6	22.2	0.8	23.0	-2.8	20.3
1948	17.7	5.8	23.5	2.0	25.5	1.1	26.5	1.8	28.3
1949	12.8	6.2	19.0	2.4	21.3	0.5	21.9	3.4	25.2
1950	13.6	6.3	19.9	2.7	22.6	1.5	24.1	9.2	33.3
1951	15.9	6.5	22.4	3.1	25.6	1.8	27.4	5.5	32.9
1952	15.0	6.7	21.7	3.3	25.0	0.9	25.9	-7.4	18.5
1953	13.0	6.4	19.4	3.5	22.9	-0.4	22.5	-3.0	19.5
1954	12.4	5.9	18.3	3.6	21.9	0.9	22.8	-4.5	18.3
1955	11.3	6.2	17.5	3.7	21.2	1.5	22.7	5.1	27.8
1956	11.3	6.6	17.8	3.7	21.6	0.9	22.4	5.7	28.2
1957	11.1	6.6	17.7	3.9	21.6	1.4	23.0	6.5	29.5
1958	13.2	6.7	19.8	4.0	23.9	2.0	25.8	12.4	38.3
1959	10.7	7.1	17.8	4.3	22.0	2.4	24.5	0.0	24.5
1960	11.2	8.5	19.7	4.3	24.0	1.2	25.2	0.6	25.2
1961	12.0	9.2	21.1	4.4	25.5	1.8	27.3	6.7	34.0
1962	12.1	9.9	22.0	4.5	26.5	2.7	29.2	5.6	34.8
1963	11.8	11.0	22.8	4.7	27.5	3.1	30.6	6.9	37.5
1964	10.5	11.6	22.1	4.9	27.0	2.8	29.8	6.6	36.5
1965	12.9	12.7	25.6	5.1	30.7	4.0	34.7	11.0	45.7
1966	14.0	13.9	27.8	5.4	33.2	3.6	36.8	8.3	45.1
1967	12.3	14.5	26.8	5.8	32.6	3.1	35.8	6.3	42.1
1968	12.3	15.5	27.8	6.2	34.0	1.9	35.9	2.1	38.0
1969	14.3	16.6	30.9	6.6	37.5	2.6	40.1	0.0	40.1
1970	14.4	17.6	32.0	6.9	38.9	2.2	41.1	-1.4	39.8
1971	15.0	19.1	34.1	7.4	41.5	4.7	46.3	7.7	54.0
1972	19.5	21.3	40.7	7.9	48.6	5.8	54.5	24.3	78.7
1973	34.4	24.7	59.1	8.9	68.0	9.5	77.6	53.3	130.9
1974	27.3	28.1	55.4	10.5	65.9	8.8	74.7	1.8	76.5
1975	25.5	23.9	49.4	12.4	61.8	9.8	71.6	24.5	96.1
1976	20.2	26.7	46.9	13.8	60.6	11.7	72.4	56.7	129.0
1977	19.9	26.1	46.0	15.5	61.5	15.8	77.3	22.0	99.3
1978	25.2	29.7	54.9	17.0	71.9	17.6	89.5	65.2	154.7
1979	27.4	33.8	61.3	19.3	80.6	25.9	106.5	55.3	161.8
1980	16.1	34.7	50.8	21.5	72.3	16.2	88.5	1.2	89.7
1981	26.9	35.8	62.7	23.6	86.3	16.7	103.0	-75.6	27.4
1982	23.8	36.4	60.3	24.2	84.5	7.7	92.1	-81.3	10.9
1983	14.2	37.0	51.3	23.8	75.0	3.4	78.4	-30.3	48.1
1984	26.1	39.2	65.3	20.8	86.1	-2.1	84.0	-128.9	-44.9
1985	28.8	55.2	83.9	19.3	103.2	-16.4	86.8	-114.7	-27.9
1986	31.1	54.5	85.6	17.8	103.4	-21.3	82.1	-70.3	11.8
1987	39.7	56.3	96.0	17.1	113.1	-12.9	100.2	22.7	122.9
1988	41.1	57.2	98.3	17.3	115.6	-5.2	110.4	2.3	112.7
1989	49.9	57.3	107.2	17.8	125.0	-2.6	122.4	-8.7	113.7
1990	51.0	67.0	117.9	17.5	135.4	-0.9	134.5	-23.9	110.7
1991	44.6	70.0	114.6	17.4	132.0	1.9	133.9	-36.2	97.7

funds, adjusted for changes in the dollar's purchasing power over the 1940-91 period. The inflation-adjusted series present a noticeably different picture. The fluctuations in the components of the SAUF accounts are moderated, and the level of funds over the past few years (although rising) is still below the 1940-70 trend level.

Conclusions

The major sources of funds for farm sector investment have been net farm income, off-farm income, and capital consumption allowances. Off-farm income has become an increasingly important source of equity capital. However, external debt financing and real (accrued) capital gains (and losses) have also been important sources, especially in the 1970's and 1980's. The percent of farm capital accumulation financed externally (by an increase in farm debt) fell precipitously from 1980-86 (the farm financial crisis years), but is again approaching "normal" levels. Likewise, real capital gains provided a major source of funds for farm investments in the 1970's. But as income expectations changed abruptly in 1979,

capital losses on farm assets led to a loss of nearly \$250 billion in farm wealth from 1980-86. The value of farm business equity, excluding operator households, fell from \$910.3 billion in 1980 to \$681.0 billion in 1986.

The major uses of funds for the farm sector have been gross capital expenditures, real capital gains, and proprietor withdrawals. Since gross capital expenditures are a relatively steady component of total uses, and the other uses of funds (net change in financial assets, and value of net change in inventories) are relatively small, changes in income, capital, and financial withdrawals by farm proprietors largely determine the total uses of funds. Unfortunately, direct measurements of the components of proprietors' withdrawals are either unavailable or highly uncertain.

An approach is needed which would further define the SAUF of nonoperator landlords and others, rather than of continuing farm-operator families. Furthermore, better data on the sources and amounts of nonfarm equity capital in U.S. agri-

Table A-2--Uses of funds for the U.S. farm sector

	Gross capital expenditures	Value of net change in inventories	Net change in financial assets	Proprietor withdrawals	Uses excluding capital gains	Real capital gains	Uses including capital gains
Billion dollars							
1940	2.2	0.3	0.4	5.4	8.3	0.6	8.9
1941	2.7	0.4	1.0	6.6	10.6	0.2	10.8
1942	2.8	1.1	1.9	8.6	14.4	4.3	18.7
1943	2.6	-0.1	2.3	11.8	16.6	5.6	22.2
1944	3.4	-0.4	2.7	11.3	16.9	4.8	21.7
1945	3.5	-0.4	2.4	12.5	18.0	5.8	23.8
1946	4.1	0.0	1.0	16.4	21.5	-7.3	14.2
1947	5.4	-1.8	0.1	19.3	23.0	-2.8	20.3
1948	6.6	1.7	0.1	18.2	26.5	1.8	28.3
1949	6.9	-0.9	-0.2	16.0	21.9	3.4	25.2
1950	7.0	0.8	0.2	16.1	24.1	9.2	33.3
1951	7.4	1.2	0.6	18.3	27.4	5.5	32.9
1952	7.0	0.9	0.2	17.8	25.9	-7.4	18.5
1953	6.9	-0.6	0.2	16.0	22.5	-3.0	19.5
1954	6.5	0.5	0.4	15.4	22.8	-4.5	18.3
1955	6.7	0.2	0.4	15.3	22.7	5.1	27.8
1956	6.5	-0.5	0.0	16.4	22.4	5.7	28.2
1957	6.8	0.6	0.4	15.2	23.0	6.5	29.5
1958	7.6	0.8	0.8	16.6	25.8	12.4	38.3
1959	8.2	0.0	-1.0	17.2	24.5	0.0	24.5
1960	7.6	0.4	-1.1	18.4	25.2	0.6	25.8
1961	7.9	0.3	0.2	18.9	27.3	6.7	34.0
1962	8.4	0.6	0.5	19.8	29.2	5.6	34.8
1963	9.0	0.6	0.2	20.8	30.6	6.9	37.5
1964	9.6	-0.8	0.5	20.5	29.8	6.6	36.5
1965	10.4	1.0	0.5	22.7	34.7	11.0	45.7
1966	11.3	-0.1	0.4	25.1	36.8	8.3	45.1
1967	11.9	0.7	0.6	22.6	35.8	6.3	42.1
1968	11.0	0.1	0.8	24.0	35.9	2.1	38.0
1969	11.2	0.1	0.7	28.1	40.1	0.0	40.1
1970	10.5	0.0	1.2	29.4	41.1	-1.4	39.8
1971	11.9	1.4	1.5	31.5	46.3	7.7	54.0
1972	14.6	0.9	2.0	37.0	54.5	24.3	78.7
1973	19.3	3.4	2.0	52.9	77.6	53.3	130.9
1974	19.7	-1.6	0.4	56.3	74.7	1.8	76.5
1975	20.7	3.4	2.3	45.1	71.6	24.5	96.1
1976	25.9	-1.5	1.6	46.4	72.4	56.7	129.0
1977	26.9	1.1	-0.5	49.7	77.3	22.0	99.3
1978	31.0	1.9	3.3	53.3	89.5	65.2	154.7
1979	34.0	5.0	2.3	65.3	106.5	55.3	161.8
1980	31.6	6.3	1.3	49.4	88.5	1.2	89.7
1981	29.0	6.5	1.6	65.8	103.0	-75.6	27.4
1982	23.8	-1.4	1.9	67.8	92.1	-81.3	10.9
1983	22.1	-10.9	1.8	65.4	78.4	-30.3	48.1
1984	22.2	6.0	3.1	52.7	84.0	-128.9	-44.9
1985	16.2	-2.3	1.6	71.3	86.8	-114.7	-27.9
1986	14.7	-2.2	4.5	65.1	82.1	-70.3	11.8
1987	19.3	-2.3	2.9	80.3	100.2	22.7	122.9
1988	20.1	-3.4	0.5	93.2	110.4	2.3	112.7
1989	22.1	4.8	1.1	94.3	122.4	-8.7	113.7
1990	24.6	3.5	2.4	104.0	134.5	-23.9	110.7
1991	21.5	0.4	4.9	107.1	133.9	-36.2	97.7

culture, and on uses of funds (particularly proprietors' withdrawals) is required. Such data would help explain how farm and nonfarm equity capital flows affect capital expenditures for farmland, machinery and equipment, and other farm sector assets of farm operator families. It would also help forecast demand for agricultural credit, and evaluate the likely impacts of agricultural program changes on farm operator families.

References

- Thomas A. Carlin and Charles R. Handy, "Concepts of the Agricultural Economy and Economic Accounting," *American Journal of Agricultural Economics*, 1974, pp. 964-75.
- John R. Fiske, Marvin T. Batte, and Warren F. Lee, "Nonfarm Equity in Agriculture: Past, Present, and Future," *American Journal of Agricultural Economics*, December 1986, pp. 1319-23.
- Stephen F. Mathews and David H. Harrington, "Analysis of Nonfarm Equity Forms of Investment Applicable to Agriculture," *American Journal of Agricultural Economics*, December 1986, pp. 1324-29.
- Emanuel Melichar, "The Farm Business Sector in the National Flow of Funds Accounts," 1970 Proceedings of the Business and Economic Statistics Section, American Statistical Association, Detroit, Michigan, December 29, 1970.
- John B. Penson, "Toward an Aggregate Measure of Saving and Capital Finance for U.S. Farm Operator Families," *American Journal of Agricultural Economics*, February 1977.
- John B. Penson, Jr., David A. Lins, and George D. Irwin, "Flow-of-Funds Social Accounts for the Farm Sector," *American Journal of Agricultural Economics*, February 1971.
- Alvin S. Tostlebe, *Capital in Agriculture: Its Formation and Financing Since 1870*, National Bureau of Economic Research. New York: Princeton University Press, 1957.

Are Small Hog Operations Surviving in Today's Market?

by
Robert G. McElroy¹

Abstract: Small farms account for two-thirds of all U.S. specialized hog operations. USDA's *Farm Costs and Returns Surveys* show that for 1987-91 the average small hog farm received negative net cash incomes. These results question the conventional wisdom that the hog enterprise usually carries other enterprises on small farms.

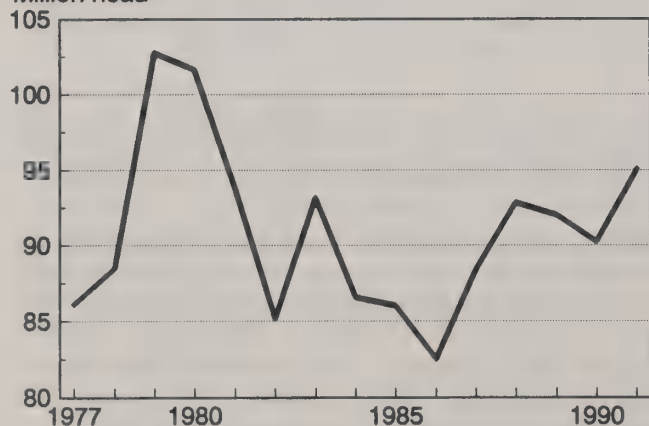
Keywords: Hog farms, small farms, farm income, *Farm Costs and Returns Survey*

Small specialized hog operations with gross sales under \$50,000 make up 67 percent of all farms classified as hog operations under Standard Industrial Classification code, according to USDA's *Farm Costs and Returns Surveys* (FCRS). This definition requires over 50 percent of a farm's sales to come from hogs. However, these farms account for only 10 percent of total livestock sales earned by specialized hog farms. Small hog farms represent around 50,000 operations, primarily in the North-Central United States, a region with a long history of hog farming. With many other sectors of U.S. agriculture increasing in farm size, the question arises as to whether the small hog producer is becoming a thing of the past.

Over the past 15 years, the annual U.S. pig crop has tended to average between 85 and 95 million head (figure B-1). Per capita consumption of pork remained fairly constant over that time, although pork exports fell in the mid-1980's but have risen in recent years. Demand remains strong (despite negative press concerning cholesterol), supply is adequate, and retail prices are low.

¹ Agricultural Economist, Agriculture and Rural Economy Division, Economic Research Service.

Figure B-1
U.S. pig crop, 1977-91
Million head



Since 1977, farm-level hog prices have been quite variable, ranging from an annual low of \$38 per hundredweight in 1980 to a high of \$53.70 in 1990 (figure B-2). USDA hog analysts suggest that at current costs of production, a price of around \$40 is necessary for large farrow-to-finish hog operations to break even. On a per-unit-of-output basis, small operations would likely have lower hired labor expenses than large operations, but higher utility and repair costs due to less intensive use of equipment and facilities. This is borne out by cost-of-production studies. High market prices are needed for the survival of small operations with their higher per-unit production costs.

Small hog operations, in general, face disadvantages in production and marketing. Efficient feed conversion and animal health require close management to maintain low per-unit costs. Small producers--other than possibly retirees--may work full-time off the farm and lack the time to attend to details. Lack of expensive facilities such as concrete floors can also hinder animal health in confinement operations. Feed purchases not in bulk usually cost more. Moreover, modest numbers of sows and production hinder forward contracting and lead to sales at local auctions that offer lower and more uncertain prices.

Figure B-2
Average farm-level hog price, 1977-91
\$ per cwt.

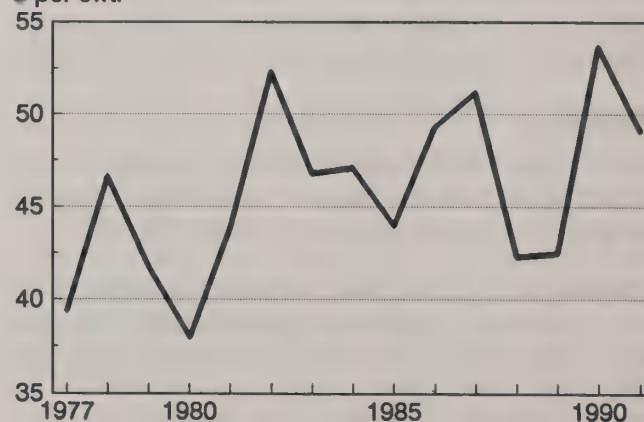


Table B-1--Net cash income for hog farms with sales under \$50,000 was continuously negative for 1987-91

	Year					1987-91 average
	1987	1988	1989	1990	1991	
	Dollars per operation					
Gross cash income	11,467	11,442	12,522	9,875	12,167	11,427
Livestock sales	9,339	8,288	9,377	8,355	8,956	8,813
Crop sales (incl. net CCC loans)	801	874	1,071	454	1,356	877
Government payments	685	723	653	343	382	572
Other farm-related income	642	1,557	1,421	723	1,473	1,165
Less: Cash expenses	13,354	15,124	14,716	12,780	14,359	14,095
Variable	10,489	11,811	11,698	9,817	11,256	11,030
Livestock purchases	1,455	1,379	1,803	1,295	1,114	1,422
Feed	4,220	4,932	5,236	3,898	5,334	4,691
Veterinary services and supplies	223	241	221	228	277	236
Other livestock-related expenses	81	82	104	88	86	88
Seed and plants	273	302	271	215	204	258
Fertilizer and chemicals	708	793	827	568	583	705
Labor	280	186	118	319	354	243
Fuels and oils	609	625	533	594	724	611
Repairs and maintenance	1,262	1,605	1,207	1,378	1,003	1,327
Machine-hire and custom work	138	146	129	146	140	140
Utilities	709	917	685	550	620	711
Other variable expenses	530	603	564	538	817	598
Fixed	2,865	3,313	3,017	2,964	3,104	3,065
Real estate and property taxes	576	939	557	578	692	682
Interest	1,559	1,524	1,481	1,702	1,649	1,578
Insurance premiums	422	496	571	429	553	490
Rent and lease payments	308	355	409	255	209	315
Equals: Net cash farm income (NCI)	-1,887	-3,682	-2,194	-2,905	-2,192	-2,668
Percent of farms with negative NCI	66	73	69	76	68	71

Source: Farm Costs and Returns Surveys, USDA.

An examination of the financial status of small hog producers for the 1987-91 period shows an average net cash income of minus \$2,668. This ranged from minus \$3,682 in 1988 when prices were at their lowest to minus \$1,877 in 1987 when prices were relatively high. An average 71 percent of small hog operations reported negative net cash incomes. Livestock sales, which can include cattle, poultry, or other livestock species, made up an average 77 percent of total gross income. The second largest component of cash income is from machine hire, custom work, and other farm-related sources; crop sales contributed less than 8 percent.

Feed accounted for nearly one third of total cash expenses. Interest, purchased feeder livestock, and repairs and maintenance each add about 10 percent to expenses. Interest and purchased livestock expenses are, for the most part, beyond the control of the small hog farmer, but feed, repairs, and many other expense categories are areas where improved management can result in lower costs and, therefore, higher net incomes.

Two Regions Predominate

Hogs are raised in all 50 States, with the North Central and Southeastern regions predominating. Iowa alone accounted for 25 percent of all hogs marketed in 1991. The North Central region produces nearly one-half of all hogs marketed by small hog operations, while the Southeast produces about one-fourth. The remainder comes from the other States.

Over the 1987-91 period, farms in the North Central region tended to be larger than others, averaging \$13,036 in livestock sales, compared with \$7,097 in the Southeast, and \$8,813 nationally. However, because of much higher interest ex-

Figure B-3
Major U.S. hog production regions



penses--likely due to higher land values--North Central net cash incomes were about equal to those in the Southeast, although a smaller percentage of North Central farms had negative incomes.

Conclusion

The financial data for 1987-91 imply that losses are the rule rather than the exception for small hog producers. Two considerations have not been analyzed. The first is the importance of the hog enterprise as food for the farm family. The FCRS indicates that an average \$2,400 in nonmoney income was earned by the small hog producer. Typically this is home consumption of farm products, or the hogs themselves. Another consideration is off-farm income earned by the farm

Table B-2--North Central small hog farms had higher gross incomes but comparable net incomes to those in the Southeast

1987-91 average	Region			
	North Central	Southeast	Other U.S.	All small hog farms
	Dollars per operation			
Gross cash income	16,805	9,089	5,176	11,427
Livestock sales	13,036	7,097	3,790	8,813
Crop sales (incl. net CCC loans)	1,385	723	224	877
Government payments	1,024	288	129	572
Other farm-related income	1,359	982	1,033	1,165
Less: Cash expenses	18,661	10,817	10,026	14,095
Variable	14,625	9,125	7,180	11,030
Livestock purchases	1,824	1,318	886	1,422
Feed	6,532	3,883	2,559	4,691
Veterinary services and supplies	341	107	193	236
Other livestock-related expenses	121	42	79	88
Seed and plants	392	208	93	258
Fertilizer and chemicals	927	775	288	705
Labor	161	252	363	243
Fuels and oils	794	450	477	611
Repairs and maintenance	1,594	1,138	1,085	1,327
Machine-hire and custom work	195	100	93	140
Utilities	885	535	604	711
Other variable expenses	856	317	459	598
Fixed	4,037	1,692	2,846	3,065
Real estate and property taxes	911	403	587	682
Interest	2,017	804	1,626	1,578
Insurance premiums	591	330	484	490
Rent and lease payments	517	154	149	315
Equals: Net cash farm income (NCI)	-1,856	-1,728	-4,850	-2,668
Percent of farms with negative NCI	63	69	84	71

Source: Farm Costs and Returns Surveys, USDA.

household. Recent studies show that nonfarm employment by farm households is common and is most important on small operations (for example, see the Farm Household Perspective section, beginning on page 4 in this issue).

The bottom line, then, is that profit from the hog enterprise may not be the prime economic motive for small hog production. Tradition also plays a major part in small farming, continuing what earlier generations did. While the data show

that fixed cash costs are being covered, total costs are not, resulting in net losses. The future for these farmers is that they will probably continue losing money on hogs but they will not necessarily quit producing hogs. However, their share of total U.S. hog production will probably decline. Producer organizations see a not-too-distant future of fewer but larger hog operations, and contracting is becoming more popular, particularly in the Southeast.

The Impacts of Interest Rates on Farm Businesses

by

Charles B. Dodson and Ted Covey¹

Abstract: Average annual interest rates have been trending downward since 1981. With respect to individual farm businesses, these new low-interest rates should increase farm capital investment, encourage investment in projects with longer-term payoffs, promote conservation practices, increase commodity prices, but have a limited impact on farmer choice of financing and the number of farm defaults.

Keywords: Interest rates, inflationary expectations, risk premiums.

When farmers save money, interest received is their reward for postponing consumption to a later period. When farmers borrow money, interest paid represents the cost required in order for them to secure debt capital. When interest rates are high, farmers are willing to save more and less likely to borrow and farm lenders are encouraged to lend money.

Interest rates have trended downward since 1981. Interest rates on new short-term loans in 1992 were about one- to two-thirds of their 1981 levels. For example, interest rates on short-term loans made by large commercial banks declined from a 1981 average of 19.8 percent to 6.8 percent by 1992. Interest rates on new farm real estate loans have declined less dramatically in the same period. For example, the interest rate on new long-term loans by all commercial banks declined from 16.8 percent in 1981 to 9.5 percent by 1992.

The decline in interest rates to their recent low levels is due to several factors. The most significant factor has been the decline in inflation, reducing the inflationary premium attached to farm loan rates. The passing of the farm financial crisis and the decrease in the farm debt-to-asset ratio reduced the default risk premium on farm loans. The Federal Reserve's reduction of its discount rate and the low-to-even negative economic growth rate over this period has contributed to low interest rates.

Impacts of Interest Rates on the Farm Business

As representations between the trade-off between present and future consumption, interest rates influence nearly all intertemporal economic decisions. With respect to individual farm businesses, these new low interest rates impact: (1) the financing decision; (2) the investment decision; and (3) farm prices.

The Financing Decision

Specific impacts that interest rates have on the financing decision include interest expense, the choice of financing, and borrower default. The most noticeable consequence is the immediate impact that interest rates have on interest expense. USDA's estimate of total interest expense for U.S. farmers in 1991 was \$12.6 billion on a total debt of \$138.9 billion, representing 9.3 percent of total expenses. Data obtained from USDA's Farm Costs and Returns Survey (FCRS) indicate that this debt is held by 60 percent of U.S. farms. FCRS data further indicate that 9.2 percent of the farms with debt-asset ratios greater than 0.60 hold 35.6 percent of this debt. Per farm interest expense was greater than 25 percent of total per farm expenses for 10.3 percent of U.S. farms (figure C-2). These farms would probably experience the greatest impact on interest expense from a change in interest rates.

A change in interest rates would not result in an immediate and proportional change in farmers' interest expense. Borrowers with variable-rate loans would feel the impact of a change in interest rates sooner than borrowers with fixed-rate loans. Variable-rate loans tend to be associated more with non-real estate debt. Longer-term fixed-rate loans are associated with real estate debt. Commercial agricultural banks, which are the primary source of agricultural non-real estate debt, report that 84.2 percent of loans had floating rates in 1992. Real estate debt, however, accounts for 53 percent of total outstanding farm debt. The proportion of farm borrowers holding longer-term fixed-rate loans may not experience any change in their interest expense unless they refinance. Refinancing, however, can involve significant costs, especially in the case of real estate loans. Since 1989, interest rates on long-term agricultural loans have fallen by 314 basis points for commercial banks and 281 basis points for the Farm Credit System and are the lowest since the mid-1970's. This suggests that for many farm businesses, the fall in interest rates has made refinancing their long-term loans economical.

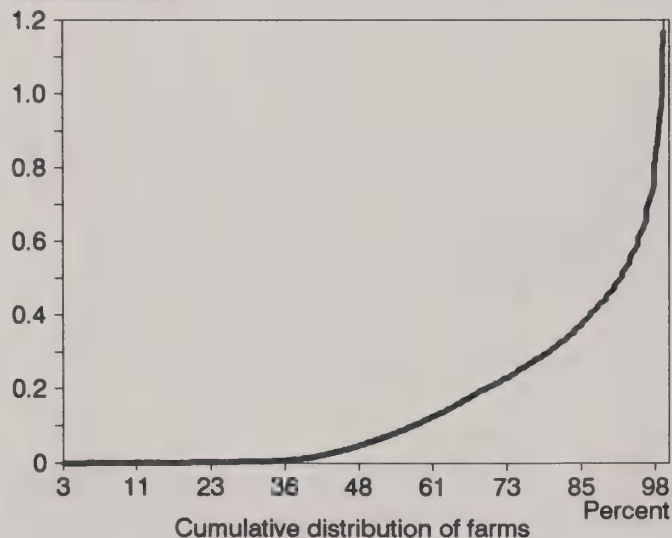
A majority of farmers hold little or no debt (figure C-1). Many, in fact, lend money through bank deposits, bond investments, and owner-financed farmland. The importance of interest income to the farm sector is shown in USDA estimates of household income showing that in 1988 farm households received 26.9 percent of total household income from interest

¹ Agricultural economists, Agriculture and Rural Economy Division, Economic Research Service.

Figure C-1

About 40 percent of U.S. farms had little or no debt in 1991

Debt-asset ratio



and dividend payments, retirement, pensions and disability payments (Ahearn, et al.). From the standpoint of interest income, reductions in interest rates are harmful to those farmers with investments in financial assets.

Interest rates will have a minimal impact on farmers choice of debt or equity financing. Equity financing involves the selling of stock or the involvement of general or limited partners, who can provide additional capital to the operation. As the cost of debt increases relative to equity, owners should be more inclined to use equity financing. In agriculture, however, the lack of an organized market for agricultural equity limits the opportunities for equity financing. Essentially a farmer is restricted to using his own accumulated wealth or seeking limited or general partners. Farmers have accumulated most of their wealth in the farm business. Seeking additional investors can involve significant search and legal costs.

For farms which have high debt burdens and cash flow difficulties, changes in interest rates can influence a borrower's decision on whether to default. Default should be most likely among farm businesses with low equity and cash flow constraints. From 1986 to 1991, the percent of farms with less than 60-percent equity and negative income declined from 11.6 percent of total farms to 7 percent. For 1991, a reduction in interest expense of 50 percent would have only changed the income position on 12 percent of the low-equity farms (table C-1). Also, an increase of 50 percent in interest expense would change the income position on only 12 percent of low-equity farms (table C-2). For the short run, changes in interest rates are not likely to have any noticeable impact on default levels.

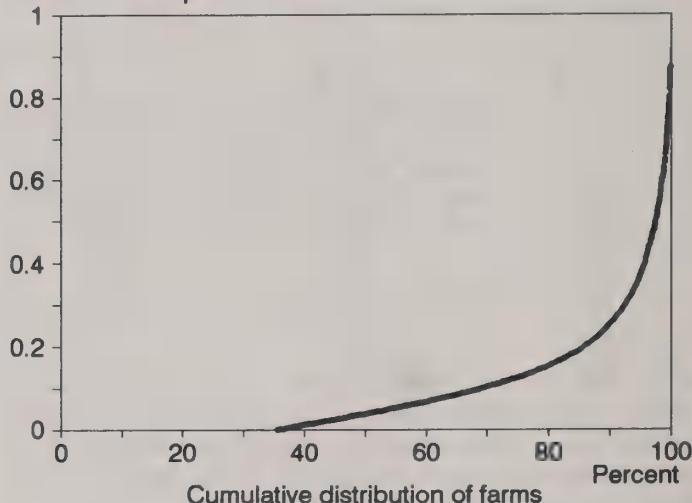
Influence on Capital Investment

Interest income and expense represent capital flows between borrowers and lenders and, as such, do not represent any new

Figure C-2

About 85 percent of U.S. farms had interest expenses that were less than 20 percent of their total expenses in 1991

Interest-total expense ratio



wealth. A change in interest rates merely changes the relative distribution of wealth between borrowers and lenders. However, changes in interest rates can result in the creation of new wealth through influence on investment decisions. Production agriculture requires a substantial investment in machinery, equipment, land, and breeding stock. Aggregate investment in machinery and equipment for U.S. farmers in 1992 was \$83 billion, \$71 billion in livestock and poultry, and \$623 billion in real estate.

Farmers are continually evaluating whether to invest in new equipment, purchase breeding stock, or expand acreage. These decisions are influenced by the net present value (NPV) of each investment project. NPV is the discounted present value of the additional cash flows created by the proposed investment over its expected life. Any project which has positive NPV should be accepted, since its NPV represents its addition to the farmer's wealth.

Mathematically expressed, the NPV equation appears as follows:

$$NPV = \sum_{t=1}^n \frac{\text{additional cash flows in period } t}{1 + \text{nominal interest rate}}$$

In the above equation, a decline in interest rates would decrease the denominator, thereby increasing the net present value of the project. Note that loan payments are not included in the numerator's cash flows. A reduction in interest rates may result in accepting investment projects which were previously rejected because they had a negative NPV.

For example, consider a farmer who is evaluating whether to purchase a new combine. He estimates the initial investment cost to be \$50,000, and that the combine will generate an estimated \$10,000 in additional annual cash flows through custom work over the next 7 years with a zero salvage value at the end of the seventh year. The NPV decision rule becomes:

Table C-1--Of the 35,841 farms with negative net incomes and less than 40 percent equity, 25,324 would still have negative income with a 100-percent reduction in interest expense

	Percent reduction in interest expense					
	0	10	25	50	75	100
Farms with negative income:						
Number of farms	35,841	35,382	34,206	31,423	28,744	25,324
Percent of total farms	2.08	2.05	1.98	1.82	1.67	1.47

Source: Farm Costs and Returns Survey, 1991

Table C-2--Of the 25,699 farms with positive net incomes and less than 40 percent equity, 19,279 would still have positive net incomes with a 100-percent increase in interest expenses.

	Percent increase in interest expense					
	0	10	25	50	75	100
Farms with positive income:						
Number of farms	25,699	25,369	24,701	22,506	20,643	19,279
Percent of total farms	2.10	2.07	2.02	1.84	1.69	1.57

Source: Farm Costs and Returns Survey, 1991

Table C-3--Capital expenditures (on new capital equipment) and capital investment (in machinery and equipment) were a stable proportion of assets and production during 1987-91.

	Capital investment/ total production	Capital investment/ total assets	Capital expenditure/ total production	Capital expenditure/ total assets
	Percent			
1987	64.8	11.2	10.0	1.8
1988	59.6	11.4	9.8	1.9
1989	59.4	10.5	9.7	1.8
1990	56.8	10.6	10.2	1.9
1991	60.7	11.8	9.0	1.8
All Years	59.2	11.1	9.7	1.8

Source: Farm Costs and Returns Survey, 1987 - 1991.

$$NPV = -50,000 + \sum_{t=1}^n \frac{10,000}{(1+i)^t}$$

At $i = 10$ percent, the NPV would be -\$1,315 and the farmer would lose wealth by purchasing the combine. If interest rates were to fall to 9 percent, the NPV would rise to \$329, thus making the project acceptable.

Agricultural investment in fixed capital is limited by the physical amount of real estate. While there may be some substitution to and from other uses, agricultural land is very specific in its purpose and use. Some optimal stock of machinery and equipment is probably required to operate this land. Over the 1987-1991 period, Farm Costs and Returns Survey data show that the stock of machinery and equipment remained fairly stable at approximately 60 percent of the total value of production and 11 percent of total assets (Table C-3).

A USDA study found that changes in real interest rates have little impact on farmers' optimal level of capital investment (LeBlanc and Hrubovcak). Some change in the level of optimal capital stock would likely occur if farmers purchased more efficient machinery and equipment. These observations suggest that farmers would not be expected to significantly expand their stock of machinery and equipment in response

to low interest rates. Farmers would, however, accelerate replacement of current machinery and equipment.

The influence of interest rates on investment projects also depends on the timing and magnitude of future cash flows. As a consequence of the mathematics of discounting, a change in interest rates will have a greater impact on cash flows occurring at the end of the project than its beginning.

For example, an investment project which has a majority of payoffs at the end of 10 years would be more susceptible to changes in interest rates than one with a majority of payoffs in the beginning. Examples of investment projects falling into the former category include fruit and tree nut orchards and certain conservation practices. Investments in terraces, grassed waterways, and tile drainage systems also tend to have longer term payoffs.

Extremely high interest rates may result in longer term cash flows approaching zero. For example, at 20 percent interest the present value of \$1 received 20 years from now is only \$0.026. Therefore, one would expect higher interest rates to encourage farmers to utilize practices providing high current returns at the expense of future returns. Examples of such practices include cropping highly erodible land, cultivation of waterways, and use of crop rotations which cause high soil loss.

Changes in interest rates affect any decision in which returns are spread over time. Since NPV represents the addition to farmer wealth resulting from the project, a reduction in interest rates should increase farm sector wealth. Alternatively, increasing interest rates should decrease farm sector wealth.

Impacts on Land and Commodity Prices

Changes in interest rates, as they relate to changes in the macroeconomy, impact land and commodity prices. As the major input in the farm production process, changes in the value of land should have a large impact on farm sector wealth. A recent study has shown that low rates of return on alternative investments caused real land values to increase (Just and Miranowski). From 1972 to 1974, over 23 percent of the land price increase was explained by a drop in the real rate of savings. High real rates of return between 1982 and 1985 explained 68 percent of the land price decrease in 1982.

Interest rates can affect commodity prices through their effect on exchange rates. As a major supplier in the world markets, U.S. agriculture is very reliant on export demand. Because foreign buyers must exchange their own currency for U.S. dollars, it would be expected that export demand would be sensitive to fluctuations in exchange rates.

The general level of interest rates in the U.S. can, therefore, influence farm commodity prices through their effect on exchange rates. Economic research and theory suggest that a decrease in interest rates would increase real commodity prices if the reduction is due to real rather than inflationary-related reasons.

Summary

Interest rates are currently at their lowest in over 20 years. Lower interest rates:

- benefit borrowers and harm lenders, with most of the benefit going to the 10 percent of farmers with high debt levels,
- have a limited impact on the farmer's choice of financing and the number of farm defaults,
- increase capital expenditures by increasing the replacement of old machinery and equipment,
- do not increase the optimal level of farm capital stock,
- encourage investment in projects with longer-term payoff,
- do promote greater conservation practices,
- increase farmland's real price if the reduction is associated with a decrease in the real savings rate,
- increase commodity real prices if the reduction in interest rates is due to real, rather than inflationary-related, reasons.

References

- Ahearn, Mary, Janet Perry, and Hisham El-Osta, "The Economic Well-Being of the Farm Operator Households, 1988-1990" USDA Agricultural Economic Report 666, January 1993.
- Just, Richard E. and John A. Miranowski. "Understanding Farmland Price Changes". *American Journal of Agricultural Economics*. vol. 75 (February 1993). pp. 156-168.
- LeBlanc, Michael and James Hrubovcak, "The Effects of Interest Rates on Agricultural Machinery Investment", *Agricultural Economics Research*, Vol. 37, No.3, Summer 1985.

The Impact of Taxing Social Security Benefits on Farm Sole Proprietors, Farm Landlords, and the Self-employed

by
Michael Compson¹

Abstract: Increasing the percentage of benefits included in AGI from 50 to 85 percent would only affect those individuals with benefits already subject to taxation. The thresholds for determining the tax status of benefits were set in 1983 and have not been indexed for inflation. If the thresholds were indexed, the number of returns with benefits subject to taxation would decrease significantly.

Keywords: Modified adjusted gross income (MAGI), Social Security benefits, bracket creep.

Politicians often refer to Social Security as the third rail of U.S. politics: touch it and die. The reason is that the elderly represent one of the most potent voting blocs in the United States. However, the effect of the Federal budget deficit on interest rates, investment, and economic growth has generated numerous budget proposals that impact the Social Security program. The Administration has proposed increasing the percentage of Social Security benefits included in adjusted gross income (AGI) for tax purposes. The IRS estimates that 81 percent of the \$91 billion in Social Security benefits reported on tax returns in 1989 was not included in AGI.

Three scenarios evaluate the impact of taxing the Social Security benefits of farm sole proprietors, farm landlords, and the self-employed. The first evaluates the impact of taxing benefits under current law. The second scenario incorporates the proposal to increase the percentage of Social Security benefits included in AGI from 50 to 85 percent and compares the results with current law liabilities. The final scenario estimates the impact of bracket creep, increased tax liabilities resulting from income growth and inflation.

The intent of the Social Security Amendments of 1983 was to tax the benefits of high-income beneficiaries. However, the thresholds for determining this group were set in 1983 and have not been indexed for inflation. As a result, the 1992 value for the \$25,000 threshold for single individuals is \$34,525 in 1982-84 constant dollars. The number of individuals paying taxes on Social Security benefits because of bracket creep and the resulting liabilities are estimated.

Current Taxes on Social Security Benefits

Under current law, up to 50 percent of Social Security benefits are taxable, depending on the person's level of modified adjusted gross income (MAGI) and filing status. In general, MAGI is equal to AGI plus nontaxable interest income and

one-half of Social Security benefits. Tax exempt interest income is added to ensure that individuals with the same level of interest income (regardless of tax treatment) are treated the same. To some degree, this limits the impact of manipulating tax liability to affect benefits. The thresholds for taxing Social Security benefits are \$25,000 for single individuals and married taxpayers who file separately and do not live together during the year, \$32,000 for joint returns, and zero for married taxpayers filing separately who lived together at any time during the year. For returns with MAGI just above the threshold, the lesser of one-half of their Social Security benefits or one-half of the amount MAGI exceeds the threshold is included in AGI.

The 1983 Act requires the Treasury to estimate the tax liabilities resulting from including benefits in AGI and transfer those funds to the Federal Old-Age and Survivor Insurance (FOAS), the Federal Disability Insurance (FDI), and the Social Security Equivalent Benefit Amount (SSEBA) at the beginning of each quarter. With the resulting tax liabilities transferred from the Treasury to the trust funds, the taxation of benefits is viewed as a reduction in the net expenditures on Social Security rather than an increase in taxes on those receiving benefits.

Data and Methodology

The impact of taxing Social Security benefits is estimated for three categories of returns: farm sole proprietors, farm landlords, and nonfarm self-employed individuals. The nonfarm self-employed individuals are included for comparison with farm sole proprietors who are also self-employed. Farm sole proprietors are defined as taxpayers who report farm income (loss) on Schedule F. Farm landlords are those reporting farm rental income (loss), excluding farm sole proprietors. The nonfarm self-employed individuals are those reporting income (loss) on Schedule C, excluding farm sole proprietors and farm landlords.

The analysis uses the 1989 IRS Individual Public Use Tax File which contains 96,588 actual tax returns with weights to reflect the taxpaying population. The file contains detailed

¹ Economist, Agriculture and Rural Economy Division, Economic Research Service

Table D-1--The impact of taxing Social Security benefits under current law

	Farm sole proprietors 1/	Farm landlords 2/	Self-employed individuals 3/
All returns			
Returns reporting benefits in AGI 4/	133,257	127,303	430,387
Returns reporting benefits in AGI as a percentage of returns reporting benefits	35.5%	47.8%	53.6%
Total benefits in AGI	\$496,427,000	\$527,754,000	\$2,039,080,000
Total benefits in AGI as a percentage of total benefits reported	15.8%	23.3%	26.2%
Average benefits in AGI	\$3,725	\$4,146	\$4,738
Total tax liability attributable to benefits	\$120,746,000	\$140,848,000	\$529,304,000
Average tax liability attributable to benefits	\$906	\$1,106	\$1,230
Single returns (MAGI > \$25,000)			
Returns reporting benefits in AGI	33,644	57,480	75,783
Total benefits in AGI	\$103,872,000	\$164,826,000	\$321,172,000
Average benefits in AGI	\$3,087	\$2,868	\$4,238
Total tax liability attributable to benefits	\$28,575,000	\$44,250,000	\$90,976,000
Average tax liability attributable to benefits	\$849	\$770	\$1,200
Joint returns (MAGI > \$32,000)			
Returns reporting benefits in AGI	99,613	69,823	354,604
Total benefits in AGI	\$392,555,000	\$362,928,000	\$1,717,908,000
Average benefits in AGI	\$3,941	\$5,198	\$4,845
Total tax liability attributable to benefits	\$92,171,000	\$96,597,000	\$438,328,000
Average tax liability attributable to benefits	\$925	\$1,383	\$1,236

1/ Farm sole proprietors are all returns reporting farm income (loss) on Schedule F. 2/ Farm landlords are all returns reporting farm rental income (loss) excluding farm sole proprietors. 3/ Self-employed individuals were those reporting income (loss) on Schedule C excluding returns reporting farm income (loss) or farm rental income (loss). 4/ AGI is adjusted gross income.

Source: 1989 IRS Individual Public Use Tax File.

tax return information that allows researchers to simulate the impact of changes in the Federal tax code. This includes the amount of tax-exempt interest, gross Social Security benefits, AGI, the amount of benefits included in AGI, and filing status, all necessary to estimate the impact of taxing Social Security benefits.

Unfortunately, the file does not contain all of the information needed to estimate the tax status of Social Security benefits for a small number of returns. The lack of information made it impossible to accurately estimate the tax status of benefits and the amount of benefits to be included in AGI for some returns. Approximately 0.8 percent of the farm sole proprietors, 1.6 percent of the farm landlords, and 1.3 percent of the self-employed returns reporting benefits were removed from the sample.²

The impact of the current scheme for taxing Social Security benefits on Federal income tax liabilities is analyzed with a static microsimulation. Given the tax liability under the 1989

tax regime, the taxable portion of benefits was removed from AGI and tax liability was re-estimated and compared to 1989 liabilities.

The proposal to increase the portion of benefits included in AGI for tax purposes maintains the current formula for determining MAGI and the current thresholds. Thus, only individuals with benefits currently subject to taxation will be affected. The only difference will be the inclusion of 85 percent of gross benefits in AGI rather than the current 50 percent. For individuals with MAGI slightly above the threshold, the amount of benefits included will be the lesser of 85 percent of gross benefits or 85 percent of the amount MAGI exceeds the threshold. A static tax accounting model is used to determine the changes in tax liabilities.

The impact of bracket creep was estimated with new index thresholds to determine changes in the tax status of benefits. Adjusted \$25,000 and \$32,000 thresholds for 1989 are \$31,000 and \$39,680, respectively.³ The number of returns

² As a result, the aggregate impacts of taxing benefits for each of the scenarios examined will be slightly underestimated.

³ The new thresholds were calculated using the consumer price index with 1982-84 dollars as the base.

Table D-2--The impact of increasing the percentage of Social Security benefits included in AGI to 85 percent relative to current law

	Farm sole proprietors 1/	Farm landlords 2/	Self-employed individuals 3/
All returns			
Increase in total benefits in AGI 4/	\$347,499,000	\$369,428,000	\$1,427,356,000
Increase in average benefits in AGI	\$2,608	\$2,902	\$3,316
Increase in total tax liability attributable to benefits	\$89,931,000	\$103,420,000	\$390,780,000
Average increase in tax liability attributable to benefits	\$675	\$812	\$908
Single returns (MAGI > \$25,000)			
Increase in total benefits in AGI	\$72,710,000	\$115,378,000	\$224,820,000
Increase in average benefits in AGI	\$2,161	\$2,007	\$2,967
Increase in total tax liability attributable to benefits	\$20,420,000	\$32,076,000	\$65,064,000
Average increase in tax liability attributable to benefits	\$607	\$558	\$859
Joint returns (MAGI > \$32,000)			
Increase in total benefits in AGI	\$274,788,000	\$254,049,000	\$1,202,535,000
Increase in average benefits in AGI	\$2,759	\$3,638	\$3,391
Increase in total tax liability attributable to benefits	\$69,511,000	\$71,343,000	\$325,716,000
Average increase in tax liability attributable to benefits	\$698	\$1,022	\$919

1/ Farm sole proprietors are all returns reporting farm income (loss) on Schedule F. 2/ Farm landlords are all returns reporting farm rental income (loss) excluding farm sole proprietors. 3/ Self-employed individuals were those reporting income (loss) on Schedule C excluding returns reporting farm income (loss) or farm rental income. 4/ AGI is adjusted gross income.

Source: 1989 IRS Individual Public Use Tax File.

affected by bracket creep and the resulting tax liabilities were estimated and compared with current law liabilities.

Results

Taxing Benefits Under Current Law

Estimates for the impact of taxing Social Security benefits under current law are presented for all returns, single returns, and joint returns to highlight the differences between filing status (table D-1). The percentage of returns reporting gross Social Security benefits that were required to include a portion of their benefits in AGI varies widely across the three categories of returns examined⁴. Approximately 54 percent of the self-employed returns reporting benefits were required to include a portion of their benefits in AGI, followed by 48 percent of farm landlords, and only 36 percent of farm sole proprietors. The lower percentage of farm sole proprietors with benefits subject to tax may be explained by lower average gross Social Security benefits and lower income. The self-employed also had the highest percentage of their benefits

included in AGI and incurred the highest average tax liability as a result of taxing benefits.

On average, farm sole proprietors filing joint returns included \$3,941 of their benefits in AGI, approximately \$950 more than their counterparts filing single returns. The average tax liability attributable to Social Security benefits for joint returns was \$925, about \$75 more than single farm sole proprietors. The average self-employed joint return included about \$600 more benefits in AGI and incurred an additional \$36 in tax liability relative to single returns. The average tax liability of farm landlords filing joint returns was \$1,383, nearly double the average liability for single returns.

Including 85 Percent of Benefits in AGI

Although the number of returns required to include benefits in AGI would be unchanged under the current proposal, the amount of benefits included would change. Farm sole proprietors and farm landlords would see the total amount of their benefits included in AGI increase by about \$347 million and \$369 million, respectively (table D-2). The average benefits included in AGI would increase by \$2,608 for farm sole proprietors and \$2,902 for farm landlords. The proposal would increase the total tax liabilities attributable to Social Security benefits for farm sole proprietors by approximately \$90 million, with the average tax liability increasing by \$675. The total and average tax liabilities attributable to benefits for

4/ These percentages are based on the returns reporting gross Social Security benefits on tax returns. Tax return data capture neither all of the individuals receiving benefits nor the total amount of benefits paid out in a given year for two reasons. First, many individuals receive benefits but do not earn enough income to require filing a tax return. Second, individuals whose benefits are not subject to taxation are not required to report their gross Social Security benefits.

Table D-3--The impact of taxing Social Security benefits on benefits received

	Farm sole proprietors 1/	Farm landlords 2/	Self-employed Individuals 3/
Gross benefits			
Total gross benefits reported by all returns	\$3,133,135,000	\$2,260,020,000	\$7,774,034,000
Total gross benefits reported by returns with benefits in AGI 4/	\$1,222,479,000	\$1,259,027	\$4,718,938,000
Average gross benefits reported by returns with benefits in AGI	\$9,174	\$9,890	\$10,964
Current law compared to no benefits in AGI			
Total reduction in benefits	\$120,746,000	\$140,848,000	\$529,304,000
Average reduction in benefits	\$906	\$1,106	\$1,230
Total reduction in benefits as a percentage of gross benefits reported by all returns	3.8%	6.2%	6.8%
Total reduction in benefits as a percentage of gross benefits reported by returns with benefits in AGI	9.8%	11.1%	11.2%
Proposed policy compared to no benefits in AGI			
Total reduction in benefits	\$210,678,000	\$244,269,000	\$920,085,000
Average reduction in benefits	\$1,581	\$1,919	\$2,138
Total reduction in benefits as a percentage of gross benefits reported by all returns	6.7%	10.8%	11.8%
Total reduction in benefits as a percentage of gross benefits reported by returns with benefits in AGI	17.2%	19.4%	19.4%

1/ Farm sole proprietors are all returns reporting farm income (loss) on Schedule F. 2/ Farm landlords are all returns reporting farm rental income (loss) excluding farm sole proprietors. 3/ Self-employed individuals were those reporting income (loss) on Schedule C excluding returns reporting farm income (loss) or farm rental income (loss). 4/ AGI is adjusted gross income.

Source: 1989 IRS Individual Public Use Tax File.

farm landlords would increase by about \$103 million and \$812.

As a result of the current proposal, self-employed individuals would see the total amount of their benefits included in AGI increase by approximately \$1.4 billion, with the average increasing by \$3,316. Their total and average tax liabilities attributable to benefits would increase by \$390 million and \$908, respectively.

Since the tax liabilities attributable to Social Security benefits are transferred from the Treasury to the respective trust funds, the taxing of benefits is considered a net reduction in benefit expenditures. Viewed in this context, the current scheme for taxing benefits reduces the total gross Social Security benefits reported by all farm sole proprietors by approximately 4 percent (table D-3). For the farm sole proprietors with benefits subject to taxation, the reduction in benefits is more than twice as large at 10 percent. The proposal to include 85 percent of benefits in AGI would reduce the total benefits for all farm sole proprietors by nearly 7 percent and by more than 17 percent for the farm sole proprietors with benefits subject to taxation.

Current law reduces total gross Social Security benefits for all farm landlords by slightly more than 6 percent. For farm landlords with benefits subject to tax, the reduction in benefits is nearly double at 11 percent. The proposal to increase the amount of benefits included in AGI would reduce the total

benefits for all farm landlords by nearly 11 percent and by nearly 20 percent for farm landlords with benefits subject to taxation. Current law reduces the total amount of benefits reported by self-employed individuals by 6.8 percent. For self-employed individuals with benefits in AGI, the reduction in benefits is nearly twice as large at 12.2 percent. The current proposal would decrease the total benefits for all self-employed by nearly 12 percent and for those with benefits subject to tax by 19 percent.

In summary, the proposal to increase the percentage of benefits included in AGI would reduce the net Social Security benefits for individuals with benefits subject to taxation by an additional 8 percentage points relative to current law. The average tax liability attributable to Social Security benefits would be nearly \$1,600 for farm sole proprietors, \$1,900 for farm landlords, and \$2,100 for self-employed individuals.

Indexing the Thresholds

After adjusting the 1989 thresholds to reflect changes in inflation, the number of farm sole proprietors and farm landlords required to include a portion of their benefits in AGI would decrease by 51 and 43 percent compared to current law (table D-4). The number of self-employed returns required to include benefits in AGI would decrease by 41 percent. Relative to current law, farm sole proprietors would see the total amount of benefits included in AGI reduced by 42

Table D-4--The impact of indexing the thresholds for taxing benefits compared to current law

	Farm sole proprietors 1/	Farm landlords 2/	Self-employed individuals 3/
	Percent		
All returns			
Percentage decrease in returns reporting benefits in AGI if thresholds were indexed 4/	51.5	43.2	41.8
Percentage decrease in total benefits reported in AGI if thresholds were indexed	41.8	30.3	32.9
Percentage decrease in total tax liability attributable to benefits if thresholds were indexed	32.5	25.1	25.9
Single returns (MAGI > \$31,000)			
Percentage decrease in returns reporting benefits in AGI if thresholds were indexed	38.3	56.5	38.7
Percentage decrease in total benefits reported in AGI if thresholds were indexed	18.0	47.0	33.2
Percentage decrease in total tax liability attributable to SS benefits if thresholds were indexed	16.4	43.0	29.7
Joint returns (MAGI > \$39,680)			
Percentage decrease in returns reporting benefits in AGI if thresholds were indexed	55.9	32.2	42.4
Percentage decrease in total benefits reported in AGI if thresholds were indexed	48.1	22.7	32.9
Percentage decrease in total tax liability attributable to benefits if thresholds were indexed	37.4	16.9	25.1

1/ Farm sole proprietors are all returns reporting farm income (loss) on Schedule F. 2/ Farm landlords are all returns reporting farm rental income (loss) excluding farm sole proprietors. 3/ Self-employed individuals were those reporting income (loss) on Schedule C excluding returns reporting farm income (loss) or farm rental income (loss). 4/ AGI is adjusted gross income.

Source: 1989 IRS Individual Public Use Tax File.

percent, farm landlords 30 percent, and self-employed individuals 33 percent.

The total tax liability attributable to Social Security benefits would decrease by 33 percent for farm sole proprietors, 25 percent for farm landlords, and by 26 percent for self-employed individuals, relative to current law. In summary, the results indicate that if the thresholds were adjusted to keep their real value constant, a large percentage of the individuals currently paying taxes on their Social Security benefits would not have to do so.⁵ While not indexing the thresholds was probably intentional, it is important to recognize the impact of setting the thresholds in nominal 1983 dollars.

Summary

The Social Security Amendments of 1983 initiated the taxation of Social Security benefits of high-income beneficiaries as part of a package to maintain the solvency of the trust funds. Ten years later, the current Administration has proposed increasing the percentage of benefits subject to taxation to further reduce the net expenditures on Social Security as part of its plan to cut the Federal budget deficit. Under current law, approximately 36 percent of the farm sole proprietors, 48 percent of farm landlords, and 54 percent of the self-employed reporting Social Security benefits on their tax returns included a portion of their benefits in AGI. On average, the

current scheme for taxing benefits reduces the gross benefits of farm sole proprietors by \$906, farm landlords by \$1,106, and self-employed by \$1,230.

Increasing the benefits included in AGI for tax purposes from 50 to 85 percent would reduce the total gross Social Security benefits for the returns affected by an additional 8 percent relative to current law. The thresholds for determining the tax status of benefits were set in 1983 and have not been indexed for inflation. Many returns with benefits subject to taxation in 1989 would not have been required to include a portion of their benefits in AGI if the thresholds were indexed.

References

Aaron, Henry, Barry Bosworth, and Gary Burtless, *Can America Afford to Grow Old? Paying for Social Security*, The Brookings Institute, 1989.

Budget of the United States Government Fiscal Year 1993, Washington, D.C. 1993.

Steuerle, C. Eugene, *The Tax Decade*, The Urban Press Institute, 1992.

U.S. Department of Treasury, Statistics of Income Division. *1989 Individual Public Use Tax File*. Washington, D.C. 1992.

U.S. Department of Treasury, "Report on the Taxation of Social Security and Railroad Retirement Benefits in Calendar Year 1990," Washington, D.C. 1993.

⁵ The Tax Reform Act of 1986 has affected the amount of income included in AGI. Estimating the impact of these changes relative to the 1984 definition of AGI is an area for future research.

List of Tables

Text Tables	Page
1. Average farm business and household incomes of farm operator households by major occupation of operator, 1991.....	8
2. Levels and sources of farm operator households' income, 1991	9
3. Selected characteristics of farms and operator households whose operator's major occupation is farming and age is under 65 years, 1991.....	10
4. Strong livestock prices helping incomes of smaller operations	15
5. Distribution of commercial farms by financial position, 1990-91	15
6. Total farm debt increased by almost \$1 billion in 1992, but more than \$50 billion below 1984.....	17
A-1. Sources of funds for the U.S. farm sector	22
A-2. Uses of funds for the U.S. farm sector	23
B-1. Net cash income for hog farms with sales under \$50,000 was continuously negative for 1987-91	25
B-2. North Central small hog farms had higher gross incomes but comparable net incomes to those in the Southeast	26
C-1. Of the 35,841 farms with negative net incomes and less than 40 percent equity, 25,324 would still have negative income with a 100-percent reduction in interest expense	29
C-2. Of the 25,699 farms with positive net incomes and less than 40 percent equity, 19,279 would still have positive net incomes with a 100-percent increase in interest expenses.	29
C-3. Capital expenditures (on new capital equipment) and capital investment (in machinery and equipment) were a stable proportion of assets and production during 1987 to 1991.....	29
D-1. The impact of taxing social security benefits under current law	32
D-2. The impact of increasing the percentage of social security benefits included in AGI to 85 percent relative to current law.	33
D-3. The impact of taxing social security benefits on benefits received.	34
D-4. The impact of indexing the thresholds for taxing benefits compared to current law	35
 Appendix tables	
1. Farm income statements, 1988-93	37
2. Average income to farm operator households, 1988-93	37
3. Relationship of net cash to net farm income, 1988-93	38
4. Cash receipts, 1988-93	38
5. Farm production expenses, 1988-93	39
6. Farm income distribution by enterprise type, 1991-93	40
7. Farm income and returns, balance sheet, and rates of return, 1988-93	41
8. Farm business balance sheet, 1988-93	41
9. Farm financial ratios: liquidity, solvency, profitability, and financial efficiency, 1988-93.....	42

Appendix table 1--Farm income statements, 1988-93

Item	1988	1989	1990	1991	1992F	1993F
Billion dollars						
Cash income statement						
1. Cash receipts	151.1	161.0	169.9	167.3	169	168 to 176
Crops 1/	71.7	76.9	80.0	80.5	83	81 to 86
Livestock	79.4	84.1	89.9	86.7	86	86 to 90
2. Direct Government payments	14.5	10.9	9.3	8.2	9	8 to 12
3. Farm-related income 2/	7.1	8.2	7.2	7.6	7	6 to 8
4. Gross cash income (1+2+3)	172.7	180.2	186.4	183.1	186	185 to 193
5. Cash expenses 3/,4/	114.6	121.2	125.2	125.2	126	123 to 131
6. NET CASH INCOME (4-5)	58.1	58.9	61.3	57.9	60	57 to 65
Deflated (1987\$) 5/	55.9	54.4	54.1	49.2	50	46 to 52
Farm income statement						
7. Gross cash income (1+2+3)	172.7	180.2	186.4	183.1	186	185 to 193
8. Nonmoney income 6/	6.1	6.2	6.1	5.9	6	6 to 7
9. Inventory adjustment	-3.4	4.8	3.5	.4	4	-3 to 1
10. Total gross income (7+8+9)	175.4	191.1	196.0	189.5	195	190 to 198
11. Total expenses	134.3	141.2	145.1	144.9	144	142 to 151
12. NET FARM INCOME (10-11)	41.1	49.9	51.0	44.6	50	44 to 51
Deflated (1987\$) 5/	39.5	46.0	45.0	37.9	42	35 to 41

F = forecast. * = less than \$500 million. Totals may not add due to rounding.

1/ Includes CCC loans. 2/ Income from custom work, machine hire, recreational activities, forest product sales, and other farm sources. 3/ Excludes depreciation and perquisites to hired labor. 4/ Excludes farm households. 5/ Deflated by the GDP implicit price deflator. 6/ Value of home consumption of farm products and imputed rental value of operator dwelling.

Appendix table 2--Average income to farm operator households, 1988-93

Item	1988	1989	1990	1991P	1992F	1993F
Dollars per operator household						
Farm income to household 1/	4,201	5,796	5,742 2/	3,994	n/a	n/a
Self-employment farm income	3,386	4,723	4,973	2,716	n/a	n/a
Other farm income to household	364	1,073	768	1,278	n/a	n/a
Plus: Total off-farm income	28,829	26,223	33,265	32,549	n/a	n/a
Income from wages, salaries, and non-farm businesses	22,220	19,467	24,778	24,404	n/a	n/a
Income from interest, dividends, transfer payments, etc.	6,610	6,756	8,487	8,144	n/a	n/a
Equals: Farm operator household income	33,030	32,019	39,007	36,542	n/a	n/a

P = preliminary; F = forecast. n/a = not available. Data for 1988-90 are expanded to represent the farm operator households surveyed in USDA's Farm Costs and Returns Survey; data for 1991 are expanded to represent the total number of U.S. farms and ranches. Totals may not add due to rounding.

1/ Farm income to the household equals self-employment income plus amounts that operators pay themselves and family members to work on the farm, income from renting out acreage, and net income from a farm business other than the one being surveyed. 2/ If the additional 350,000 small farms included in the 1991 analysis were included in the 1990 analysis, farm income to the household in 1990 would be approximately \$4,600.

Appendix table 3--Relationship of net cash to net farm income, 1988-93

Item	1988	1989	1990	1991	1992F	1993F
Billion dollars						
Gross cash income	172.6	180.2	186.4	183.1	186	185 to 193
Minus cash expenses	114.6	121.2	125.2	125.2	126	123 to 131
Equals net cash income	58.0	58.9	61.3	57.9	60	57 to 65
Plus nonmoney income						
Gross rental value of dwelling	6.1	6.2	6.1	5.9	6	5 to 7
Value of inventory change	-3.4	4.8	3.5	.4	4	-3 to 1
Minus noncash expenses						
Labor perquisites	.5	.5	.5	.5	1	0 to 1
Capital cons. exc. dwellings	15.8	16.0	15.8	15.7	16	15 to 17
Minus dwelling expenses						
Capital consumption	1.5	1.8	1.7	1.7	2	1 to 2
Interest	.5	.5	.5	.5	*	0 to 1
Taxes	.5	.6	.6	.6	1	0 to 1
Repair & maintenance	.6	.5	.6	.6	1	0 to 1
Insurance	.2	.2	.2	.2	*	0 to 1
Equals net farm income	41.1	49.9	51.0	44.6	50	44 to 51

F = forecast. * = less than \$500 million.

Appendix table 4--Cash receipts, 1988-93

Item	1988	1989	1990	1991	1992F	1993F
Billion dollars						
Crop receipts: 1/						
Food grains	7.5	8.2	7.5	6.8	9	7 to 9
Wheat	6.4	7.3	6.4	5.7	7	6 to 8
Rice	1.1	.9	1.1	1.1	1	1 to 2
Feed grains and hay	14.3	17.1	18.7	19.0	20	18 to 22
Corn	8.9	11.4	13.4	13.9	15	13 to 15
Sorghum, barley, and oats	2.2	2.3	2.0	2.1	2	1 to 3
Oil crops	13.5	11.9	12.3	12.5	13	12 to 14
Soybeans	12.1	10.5	10.8	10.8	11	11 to 13
Peanuts	1.1	1.1	1.3	1.4	1	1 to 2
Cotton lint and seed	4.5	5.0	5.5	5.6	6	4 to 6
Tobacco	2.1	2.4	2.7	2.9	3	2 to 4
Fruits and nuts	9.2	9.3	9.5	9.9	10	9 to 11
Vegetables	9.8	11.5	11.5	11.3	11	10 to 13
Greenhouse & nursery	7.1	7.6	8.2	8.4	8	8 to 9
TOTAL CROPS	71.6	76.9	80.0	80.5	83	81 to 86
Livestock receipts:						
Red meats	46.5	46.9	51.9	51.1	48	46 to 54
Cattle and calves	36.8	36.9	39.9	39.6	38	37 to 42
Hogs	9.2	9.5	11.6	11.1	10	10 to 11
Sheep and lambs	.5	.5	.4	.4	*	0 to 1
Poultry and eggs	12.9	15.4	15.2	15.1	15	14 to 18
Broilers	7.4	8.8	8.4	8.4	9	9 to 11
Turkeys	2.0	2.2	2.4	2.3	2	2 to 3
Eggs	3.1	3.9	4.0	3.9	3	2 to 4
All dairy products	17.6	19.4	20.2	18.1	20	18 to 21
TOTAL LIVESTOCK	79.4	84.1	89.9	86.7	86	86 to 90
TOTAL RECEIPTS	151.1	161.0	169.9	167.3	170	168 to 176

F = forecast. * = less than \$500 million. Totals may not add due to rounding.

1/ Includes sugar, seed, and other miscellaneous crops.

Appendix table 5--Farm production expenses, 1988-93

Item	1988	1989	1990	1991	1992F	1993F
Billion dollars						
Farm-origin inputs	36.5	37.7	39.1	38.1	38	36 to 40
Feed	20.4	21.0	20.7	19.8	20	18 to 22
Feeder livestock	12.8	13.1	14.8	14.4	14	12 to 16
Seed	3.4	3.6	3.6	4.0	4	3 to 5
Manufactured inputs	18.9	20.0	21.1	21.7	21	20 to 24
Fertilizer	6.9	7.2	7.1	7.4	7	6 to 9
Fuels and oils	4.9	4.8	5.7	5.5	5	4 to 7
Electricity	2.3	2.5	2.5	2.5	2	1 to 3
Pesticides	4.6	5.4	5.7	6.3	7	6 to 8
Total interest charges	14.7	14.7	14.5	13.9	14	12 to 16
Short-term interest	6.8	6.9	6.9	6.6	6	5 to 8
Real estate interest	7.9	7.8	7.6	7.3	7	6 to 8
Other operating expenses	34.4	37.7	38.9	40.3	41	39 to 44
Repair and maintenance	6.9	7.3	7.3	7.2	8	7 to 9
Labor expenses	10.4	11.1	12.5	12.6	13	10 to 14
Machine hire & custom work	2.4	2.7	2.6	2.7	3	2 to 4
Animal health	1.3	1.5	1.5	1.4	1	0 to 2
Marketing, storage & transportation	3.5	4.1	4.0	4.5	5	4 to 6
Miscellaneous operating expenses	10.0	11.0	10.9	11.9	12	10 to 14
Other overhead expenses	29.4	31.1	31.4	30.8	31	30 to 33
Capital consumption	17.3	17.8	17.5	17.4	17	16 to 20
Taxes	4.8	5.1	5.6	6.0	6	5 to 7
Net rent to non-operator landlords	7.3	8.2	8.3	7.5	8	7 to 9
Total production expenses	134.3	141.2	145.1	144.9	145	146 to 148
Noncash expenses	16.3	16.4	16.3	16.2	16	16 to 17
Labor perquisites	.5	.5	.5	.5	1	0 to 1
Capital consumption excluding dwellings	15.8	16.0	15.8	15.7	16	15 to 17
Dwelling expenses	3.4	3.6	3.6	3.5	4	3 to 4
Capital consumption	1.5	1.8	1.7	1.7	2	1 to 2
Interest	.5	.5	.5	.5	*	0 to 1
Taxes	.5	.6	.6	.6	1	0 to 1
Repair & maintenance	.6	.5	.6	.6	1	0 to 1
Insurance	.2	.2	.2	.2	*	0 to 1
Cash expenses 1/	114.6	121.2	125.2	125.2	126	123 to 131

F = forecast. * = less than \$500 million.

1/ Total production expenses minus noncash and operator dwelling expenses.

Appendix table 6--Farm income distribution by selected enterprise type, 1991-93 1/

Item	Crops					Livestock			
	Total crops	Cash grain 2/ Tobacco	Cotton	Fruit/nut/vegetable	Thousands	Total livestock	Red meat	Poultry and eggs	Dairy
Number of farms:									
1991	859	398	111	22	118	1,246	924	45	150
1992	856	397	110	22	117	1,240	920	45	149
1993	853	395	110	22	117	1,237	917	45	148
Income:									
1. Cash receipts--					Billion dollars				
Crops									
1991	74.4	30.3	3.0	5.0	19.5	6.1	3.6	.1	.8
1992	76.9	32.3	3.1	4.9	19.9	6.4	3.8	.2	.9
1993	77	32	3	5	20	6	4	*	1
Livestock									
1991	4.7	3.3	.2	.1	.2	82.0	28.9	15.0	19.6
1992	4.5	3.1	.2	.1	.1	81.4	27.7	14.8	21.0
1993	5	3	*	*	*	83	29	16	21
2. Direct Government payments--									
1991	5.9	4.4	.0	.5	.1	2.3	1.7	.0	.3
1992	6.5	4.9	.1	.6	.1	2.5	1.8	.0	.3
1993	7	5	*	1	*	3	2	*	0
3. Gross cash income-- 3/									
1991	88.6	39.8	3.4	6.0	20.2	94.5	36.5	15.3	21.6
1992	91.3	41.9	3.5	5.9	20.5	94.2	35.6	15.0	23.1
1993	92	42	3	6	21	97	37	16	23
4. Cash expenses--									
1991	56.1	24.1	2.7	3.4	11.3	69.0	31.3	8.7	16.3
1992	52.8	23.8	2.2	3.1	9.6	72.7	36.7	9.1	19.5
1993	59	24	2	3	10	68	37	9	20
5. Net cash income--									
Current dollars 4/									
1991	32.5	15.6	.7	2.5	8.9	25.5	5.2	6.6	5.3
1992	38.4	18.1	1.3	2.8	10.9	21.5	-1.1	5.9	3.5
1993	33	18	1	3	11	29	*	7	3
Deflated (\$1987)									
1991	27.6	13.3	0.6	2.2	7.5	21.6	4.4	5.6	4.5
1992	31.8	15.0	1.1	2.4	9.0	17.8	-0.9	4.8	2.9
1993	27	15	1	2	9	23	*	6	3
Balance sheet: 5/									
6. Farm assets--									
Real estate									
1991	289.3	111.1	18.3	7.3	86.9	334.1	235.3	12.9	52.0
1992	289.3	111.1	18.3	7.3	86.9	334.1	235.3	12.9	52.0
1993	291	112	18	7	87	336	237	13	52
Nonreal estate									
1991	98.1	51.3	4.9	5.2	13.5	120.3	74.9	3.5	28.2
1992	100.1	52.4	5.0	5.3	13.7	122.9	76.5	3.6	28.8
1993	101	53	5	5	14	124	77	4	29
7. Total liabilities--									
1991	68.7	36.0	2.3	3.3	13.2	70.0	36.4	3.8	20.1
1992	69.2	36.3	2.3	3.3	13.3	70.5	36.7	3.8	20.3
1993	70	37	2	3	13	71	37	4	20
8. Debt-to-asset ratio--					Percent				
1991	17.7	22.2	10.0	26.2	13.2	15.4	11.7	23.2	25.1
1992	17.8	22.2	10.1	26.1	13.2	15.4	11.8	23.3	25.1
1993	18	22	10	26	13	15	12	23	25

1992 and 1993 are forecast. * = less than \$500 million. Numbers are rounded.

1/ Farm types are defined as those with 50 percent or more of the total value of production accounted for by a specific commodity or commodity group. 2/ Includes farms earning at least half their receipts from sales of wheat, corn, soybeans, rice, sorghum, barley, oats, or a mix of cash grains. 3/ Equals 1 + 2 + farm related income. 4/ Equals 3 - 4. 5/ Excludes farm households.

Appendix table 7--Farm income and returns, balance sheet, and rates of return, 1988-93

Item	1988	1989	1990	1991	1992F	1993F
Billion dollars						
Income and total returns:						
1. Gross farm income 1/	170	186	191	185	195	192 to 196
2. Wages and perquisites to hired labor	9	10	11	11	11	10 to 12
3. Other operating expenses, excluding interest	84	89	92	94	95	95 to 97
4. Capital consumption	16	16	16	16	16	14 to 16
5. Net income from assets and operators' labor and management (1-2-3-4)	61	71	72	64	73	70 to 72
6. Income imputed to operators' labor and management	26	28	30	29	34	32 to 36
7. Residual income to farm assets (5-6)	35	42	42	36	39	33 to 37
8. Real capital gains on assets	2	-8	-21	-32	1	-13 to -17
9. Total return to assets (7+8)	37	34	21	3	39	19 to 23
10. Interest paid	14	14	14	13	13	12 to 14
11. Real capital gains on debt	6	6	7	6	4	3 to 5
12. Total return to equity (9-10+11)	29	27	14	-5	30	11 to 13
13. Real capital gains on equity (8+11)	8	-1	-14	-27	5	-10 to -12
14. Residual income to farm equity (12-13)	21	28	28	22	26	21 to 25
Balance sheet:						
15. Assets	801	829	847	841	856	860 to 870
16. Debt	139	137	137	139	140	140 to 144
17. Equity (15-16)	662	692	710	702	716	718 to 728
Percent						
Rates of return and interest rates						
18. Rate of return on assets (ROA) (7/15)	4.4	5.1	5.0	4.2	4.5	3 to 5
19. Real capital gain on assets (8/15)	0.2	-0.9	-2.5	-3.8	0.1	-1 to 1
20. Total real return on assets (18+19)	4.6	4.2	2.5	0.4	4.6	4 to 5
21. Average interest rate paid on debt (10/16)	10.2	10.3	10.3	9.7	9.3	9 to 10
22. Real capital gains on debt (11/16)	4.2	4.7	5.0	4.1	2.9	2 to 3
23. Real cost of debt (21-22)	6.0	5.6	5.3	5.6	6.4	6 to 7
24. Rate of return on equity (ROE) ((7-10)/17)	3.1	4.0	4.0	3.1	3.6	2 to 4
25. Real capital gain on equity ((8+11)/17)	-0.6	-2.0	-4.0	-5.4	-0.5	-1 to 0
26. Total real return on equity (24+25)	2.6	2.0	0.0	-2.3	3.1	2 to 4
27. Net return on assets (NROA) (18-21)	-5.8	-5.3	-5.3	-5.5	-4.8	-5 to -6
28. Spread (20-23) 4/	-1.4	-1.5	-2.8	-5.2	-1.8	-1 to -3

F = forecast. Numbers may not add due to rounding.

1/ Excludes operator dwellings. 2/ Numbers in parentheses indicate components required to calculate a given item. 3/ Excludes operator households and CCC activity. 4/ When total real rate of return on assets exceeds total real cost of debt, debt financing is profitable.

Appendix table 8--Farm business balance sheet, 1988-93

Item	1988	1989	1990	1991	1992F	1993F
Billion dollars						
Farm assets	800.9	828.9	846.5	841.1	856	860 to 870
Real estate 1/	595.5	615.5	627.5	622.8	633	640 to 650
Livestock and poultry	62.2	66.2	70.9	68.1	71	69 to 71
Machinery and motor vehicles	81.0	84.5	84.3	83.7	83	81 to 85
Crops stored 2/	23.3	23.4	22.8	23.6	24	22 to 26
Purchased inputs	3.5	2.6	2.8	2.6	3	2 to 4
Financial assets	35.4	36.8	38.3	40.3	42	41 to 45
Farm debt	139.4	137.2	136.8	138.8	140	139 to 145
Real estate 3/	77.6	75.4	73.7	74.4	76	74 to 78
Nonreal estate	61.7	61.8	63.1	64.3	64	64 to 68
Farm equity	661.6	691.8	709.8	702.3	716	720 to 730
Percent						
Selected ratios:						
Debt-to-asset	17.4	16.5	16.2	16.5	16.4	16 to 17
Debt-to-equity	21.1	19.8	19.3	19.8	19.6	19 to 21
Debt-to-net cash income	240.1	232.8	223.2	239.4	233.6	220 to 240

F = forecast.

1/ Excludes value of operator dwellings and includes real estate values not included in the 1987 Census of Agriculture and other ERS real estate series. 2/ Non-CCC crops held on farm plus value above loan rate for crops held under CCC. 3/ Includes CCC storage and drying facility loans.

Appendix table 9--Farm financial ratios: liquidity, solvency, profitability, and financial efficiency, 1988-93

Ratios	1988	1989	1990	1991	1992F	1993F
Liquidity ratios:						
	Ratio					
Farm business debt service coverage 1/	2.36	2.41	2.50	2.39	2.5	2.4 to 2.6
Debt servicing 2/	0.18	0.17	0.16	0.16	0.2	.1 to .2
Times interest earned ratio 3/	3.80	4.40	4.51	4.20	3.7	3.2 to 3.3
Solvency ratios:						
	Percent					
Debt/asset 4/	17.4	16.5	16.2	16.5	16.4	16 to 17
Debt/equity 5/	21.1	19.8	19.3	19.8	19.6	19 to 20
Profitability ratios:						
	Percent					
Return on equity 6/	3.1	4.0	4.0	3.1	3.6	2 to 4
Return on assets 7/	4.4	5.1	5.0	4.2	4.5	3 to 5
Net farm to gross cash farm income 8/	23.8	27.7	27.3	24.4	29.5	26 to 27
Financial efficiency ratios:						
	Percent					
Gross ratio 9/	66.4	67.3	67.1	68.4	67.7	66 to 68
Interest to gross cash farm income 10/	8.2	7.9	7.5	7.4	7.7	7 to 8
Asset turnover 11/	21.9	22.1	22.3	21.7	20.0	19 to 21
Net cash farm income to debt ratio 12/	39.0	46.3	47.4	42.2	45.3	39 to 43
	Ratio					
Financial leverage index 13/	0.72	0.79	0.80	0.74	0.79	.7 to .8

F = forecast.

1/ Assesses the ability of farm businesses to repay both principal and interest. 2/ Indicates the proportion of gross cash farm income needed to service debt. 3/ Shows the farm sector's ability to service debt out of net income. 4/ Shows the proportion of all assets that are financed with debt. 5/ Measures the relative proportion of funds provided by creditors (debt) and owners (equity). 6/ Measures the ability of farm sector management to realize an adequate return on the capital invested by the owner(s). 7/ Measures how efficiently managers use farm assets. 8/ The profit margin indicates profits earned per dollar of gross income. 9/ Gives the portion of gross cash farm income absorbed by production expenses (claims on farm businesses). 10/ Gives the proportion of gross cash farm income committed to interest payments. 11/ Measures the gross farm income generated per dollar of farm business assets. 12/ Indicates the burden placed on net cash farm income to retire outstanding debt. 13/ Indicates whether the use of financial leverage is beneficial.

Get these timely reports from USDA's Economic Research Service

These periodicals bring you the latest information on food, the farm, and rural America to help you keep your expertise up-to-date. Order these periodicals today to get the latest facts, figures, trends, and issues from ERS.

Agricultural Outlook. Presents USDA's farm income and food price forecasts. Emphasizes the short-term outlook, but also presents long-term analyses of issues ranging from international trade to U.S. land use and availability. **11 issues. 1 year, \$35; 2 years, \$68; 3 years, \$101.**

Economic Indicators of the Farm Sector. Updates economic trends in U.S. agriculture. Each issue explores a different aspect of income and expenses: national and State financial summaries, production and efficiency statistics, and costs of production for livestock and dairy and for major field crops. **4 issues. 1 year, \$19; 2 years, \$36; 3 years, \$53.**

Food Review. Offers the latest developments in food prices, product safety, nutrition programs, consumption patterns, and marketing. **3 issues. 1 year, \$17; 2 years, \$32; 3 years, \$47.**

Foreign Agricultural Trade of the United States. Updates the quantity and value of U.S. farm exports and imports, plus price trends. **8 issues. 1 year, \$29; 2 years, \$56; 3 years, \$83.**

Rural Development Perspectives. Crisp, nontechnical articles on the results of new rural research and what those results mean. **3 issues. 1 year, \$12; 2 years, \$22; 3 years, \$32.**

Rural Conditions and Trends. Tracks rural events: macroeconomic conditions, employment and underemployment, industrial

structure, earnings and income, poverty and population. **3 issues. 1 year, \$14; 2 years, \$26; 3 years, \$38.**

The Journal of Agricultural Economics Research. Technical research in agricultural economics, including econometric models and statistics focusing on methods employed and results of USDA economic research. **4 issues. 1 year, \$16; 2 years, \$30; 3 years, \$44.**

Situation and Outlook Reports. These reports provide timely analyses and forecasts of all major agricultural commodities and related topics such as finance, farm inputs, land values, and world and regional developments.

Titles Include:

Agricultural Income and Finance
Agriculture and Trade Reports
Aquaculture
Cotton and Wool
Dairy
Feed
Fruit and Tree Nuts
Industrial Uses

Oil Crops
Outlook for U.S. Agricultural Exports
Rice
Sugar and Sweeteners
Tobacco
Vegetables and Specialties
Wheat

Also available:

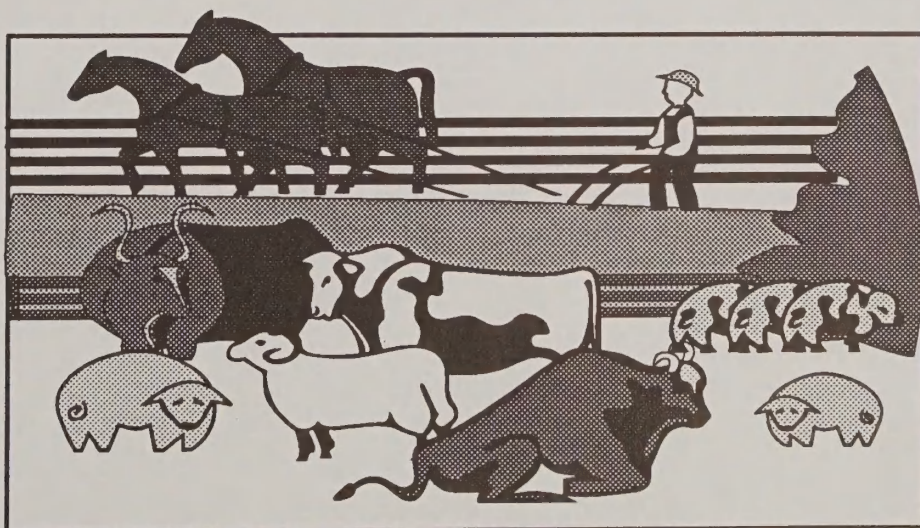
Livestock and Poultry: 1 year, \$17; 2 years, \$33; 3 years, \$48.

Livestock & Poultry Update (monthly): 1 year, \$15; 2 years, \$29; 3 years, \$42.

U.S. Agricultural Trade Update (monthly): 1 year, \$15; 2 years, \$29; 3 years, \$42.

To subscribe to these periodicals, call our order desk toll free, 1-800-999-6779 (8:30-5:00 ET in the United States and Canada; other areas, please call 301-725-7937), or write:

ERS - NASS
341 Victory Drive
Herndon, VA 22070



Add 25 percent to foreign addresses (includes Canada)

United States
Department of Agriculture
1301 New York Avenue, NW
Washington, DC 20005-4789

OFFICIAL BUSINESS

Penalty for Private Use, \$300

MOVING? To change your address, send this sheet with label intact, showing new address to: EMS Information, Rm 228, 1301 New York Ave., NW, Washington, DC 20005-4789

FIRST CLASS
POSTAGE & FEES PAID
USDA
PERMIT NO. G-145

☒ **Want to Subscribe?** ☒ **Time to Renew?**

Subscribe to **Agricultural Income and Finance** today! If you already subscribe to this timely periodical, note that expiration information about your subscription appears on the top line of your mailing label. **The expiration information will appear in one of two formats:** 1-AIS-2 (this means you have TWO issues remaining in your subscription) or APR95 (expiration date is April 1995). Disregard this notice if no renewal information appears. **Call toll free, 1-800-999-6779**, and tell us whether you want to subscribe or renew, or return this form to: **ERS-NASS, 341 Victory Drive, Herndon, VA 22070.**

Agricultural Income and Finance Situation and Outlook

- | | | 1 Year | 2 Years | 3 Years |
|---|-----------|----------------------------------|----------------------------------|----------------------------------|
| <input type="checkbox"/> Yes! I want to start my subscription. | Domestic: | <input type="checkbox"/> \$16.00 | <input type="checkbox"/> \$30.00 | <input type="checkbox"/> \$44.00 |
| <input type="checkbox"/> Yes! I want to renew my subscription. | Foreign: | <input type="checkbox"/> \$20.00 | <input type="checkbox"/> \$37.50 | <input type="checkbox"/> \$55.00 |

New subscribers:

Name: _____

Address: _____

City, State, Zip: _____

Daytime phone: (_____) _____

Renewals:

ATTACH MAILING LABEL HERE

Payment method:

- ☐ Bill me. Use purchase orders, checks drawn on U.S. banks (and in U.S. funds), cashier's checks, or international money orders. **Make payable to ERS-NASS.** Please do not send cash.
- ☐ Enclosed is \$_____.

Credit card orders: ☐ MasterCard ☐ Visa Total charges \$_____

Credit card
number:

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Card expiration
date:

--	--

Month/Year

For fastest service, call our toll-free order desk 1-800-999-6779, in the U.S. and Canada; other areas please call 703-834-0125, or FAX this page to 703-834-0110.